THE SCHOOL REVIEW

A JOURNAL OF SECONDARY EDUCATION

VOLUME XLIII MAY 1935 NUMBER 5

Educational News and Editorial Comment

ENROLMENTS IN VOCATIONAL EDUCATION IN 1934

School Life, under the caption "Vocational Education in 1934," reports in summary form the enrolments in vocational courses during the fiscal year ended June 30, 1934, as compiled by the vocational education division of the United States Office of Education. The summary shows that, in the 48 states, Hawaii, and Puerto Rico, 1,119,140 youths and adults of all ages were enrolled in vocational courses of all types. The following paragraphs interpret the changes in enrolments from figures reported for the preceding year.

The total enrolment in these vocational courses represents a decrease, as compared with the fiscal year ended June 30, 1933, of some 31,000—accounted for principally by a reduction in enrolments for part-time general continuation trade classes. As in 1933, also, decreases were reported in evening trade and industrial and home-economics classes. The decreases for 1934, like those for 1933, reflect the continuing unemployment situation, since part-time and evening classes are organized primarily for employed workers. A glance at the records, however, reveals that the decreases in enrolment in evening and part-time trade and industrial classes were partially offset in both 1933 and 1934 by increased enrolments in all-day trade and industrial classes and in 1934 by increases in agricultural evening and part-time schools.

It must be remembered, further, that the reduction in enrolments for part-time and evening trade schools is accounted for partly by decreased appropriations of federal, state, and local governments for vocational education.

A diagram accompanying the summary helps to bring home the nature of the changes. The curve for enrolment in all types of schools, federally aided and non-federally aided, after climbing rapidly and consistently from 1917 to 1932, drops sharply to 1934. The line for evening types drops also, but less sharply. The most interesting fact in the diagram is the almost complete interchange of position with respect to total enrolments of all-day and part-time enrolments in the six-year interval between 1928 and 1934, the all-day enrolments gaining at the expense of part-time enrolments. Concerned as it is solely with vocational education, the diagram does not show the rapid pouring-in to full-time schools of non-vocational types. This influx has during the same interval unquestionably far exceeded that into all-day vocational schools.

The summary here drawn upon is concluded with a discussion of "New Problems," which is brief enough to permit quotation in full.

> Widespread unemployment conditions which have confronted the nation during the past four years have served to focus attention in particular upon two problems of vocational education: (1) the educational needs of our fourteen- to eighteen-year-old youths, and (2) the needs of employed adult workers for occupational-adjustment training.
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> The gap between the age of full-time compulsory school attendance and the minimum age of employment as fixed by child-labor legislation or N.R.A. codes, or as determined by industry, presents a serious problem for vocational education.
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> It is common knowledge that during the past few years youths who have dropped out of school for one reason or another at the earliest age permissible have constituted a large proportion of the unemployed. These youths need suitable educational opportunities. It is clear that all-day school must take over some of the services which have been rendered to employed youths from fourteen to sixteen years of age by part-time schools. Furthermore, part-time schools must modify and expand their vocational programs to meet the needs of an older group—youths over rather than under sixteen years of age.
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> Under an executive order issued by the President, effective July 15, 1934, it has become possible for the first time to develop on a part-time basis a nation-wide program of apprentice training. For details see December, 1934, *School Life*.
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> While the need of any individual worker for occupational-adjustment training develops only occasionally, it will be found at any given time that a considerable number of workers may need retraining. Sometimes this need may develop overnight for large groups of workers, as a consequence of some far-reaching innovation in their trade or industry.

Added to the problem of occupational adjustment of workers to enable them to hold the jobs they have, has been the problem of providing suitable training for workers without jobs. In the latter work, state and local vocational-education staffs have, during the past year, co-operated extensively with emergency agencies, both public and private, of unemployment relief, agricultural adjustment, and home welfare.

The Kinds and Composition of Vocational Curriculums

The foregoing item gives information on the trends and the numerical position only of vocational education at the secondary level. It yields nothing on the types of vocations for which training is attempted or on the makeup of the vocational curriculums. Too little information has been available on the kinds and the composition of such curriculums.

The article by H. W. Powers in this issue of the *School Review* compensates in part this lack of information by reporting the results of an analysis, by types and makeup, of the curriculums offered in something like a sampling (1) of trade and vocational schools and (2) of technical schools and technical high schools. As the curriculums reported on are those of a year or two ago, the results of the study may not reflect with complete fidelity the current conditions in an area that is being forced to rapid readjustment in a period of kaleidoscopic social and economic change, but it is well to know conditions as they were on the eve of the current situation.

The article is timely in relation to certain other contributions and discussion concerning the general curriculum which have appeared in recent numbers of the *School Review*. For instance, Powers finds that the longer four-year curriculums in technical and technical high schools contain about twice as many "academic," or general, subjects as do the shorter curriculums of the trade and vocational schools, although the longer curriculums do not appear to be slighting the "non-academic," or occupational, subjects. In view of the impossibility of finding employment for youths under eighteen, the longer vocational curriculum with its larger element of general training seems to contribute to a solution of one of the present and pressing problems of vocational training. It may not turn out to be a wild guess to predict that most school training for occupations requiring mechanical or clerical skill will be raised to the junior-college level and be preceded by twelve years of general education.

Inducting New Teachers into Service

Even during these years of slow turnover new teachers are still joining the teaching staffs in our systems and requiring adjustment to conditions in schools and community. Too little thought and effort have been given to this important problem of adjustment, and the result is a loss of fine enthusiasm of young teachers and lowered efficiency of instruction during the first months of the school year. It was a conviction in line with this statement that prompted Charles H. Beek, principal of the junior high school at Summit, New Jersey, to conduct an inquiry into the means of securing optimum adjustment of new teachers.

The investigator desired to secure the teachers' opinions regarding the means which the teachers' association, the principal, the board of education, and the superintendent could use to assist the new teacher in making the right adjustments to his new job and environment. The first step in the inquiry was to request each teacher in the investigator's school to submit without suggestion a list of the means that he believed would be most effective. The means reported were tabulated, and each teacher was then requested to rate the means according to their importance. Returns were received from twenty-five teachers, who had had their first years of experience in twenty-two different cities and towns in nine states. The results are reported in the tabulation below. In interpreting the weightings, the reader should remember that the highest possible weighted score is 150 (6×25). Only one of the means listed receives this weighting, although a few others approach it.

AIDS WHICH CAN BE EXTENDED TO THE NEW TEACHER

	Weighted Score
By teachers' association:	
1. Make teacher feel at home by friendly services	120
2. Support teacher against unfair or unjust treatment	106
3. Hold a reception at the beginning of the year	88
4. Welcome by letter on arrival	71
5. Act as a social sponsor	61
6. Arrange for each school to entertain new teachers once during the year	53

	Weighted Score
By principal:	
1. Have confidential chats to secure spirit of friendliness, helpfulness, and general co-operative atmosphere	77
2. Foresee special difficulties and offer suggestions for meeting them	63
3. Show friendliness and evidence of a helpful spirit to overbalance the inspection duty	56
4. Provide opportunity to visit other classes for standard of procedure, routine, spirit, etc	55
5. Assign him an experienced teacher to aid him and sponsor him for the first half-year	54
6. Spare him committee work at first	46
By board of education:	
1. Give adequate salary for particular community	128
2. Make sure that the teacher has qualities to succeed	125
3. Provide proper equipment in order to prevent any embarrassing handicap	96
4. Support against unfair criticism	70
5. Let administrators run schools	58
6. Provide an opportunity to meet new teacher socially	33
7. Hold reception	13
By superintendent:	
1. Present a true picture of the new position before hiring teacher	150
2. See that he is in happy and comfortable home environment	95
3. Don't expect too much at the beginning	93
4. Leave the supervision to the principal	92
5. Provide introduction to business houses, banks, churches, etc	62
6. Provide an evening at home for new teachers	32

The Report of the National Survey a "Best Seller"

On the back cover of a recent issue of *School Life*, we are told: "Many federal Office of Education publications have been very popular. Sales of nearly a score of them have ranged from 2,000 copies sold to more than 2,000,000 copies sold." Fourth from the highest in the numbers of copies sold are the monographs of the National Survey of Secondary Education. The three items exceeding

the monographs in numbers sold are priced at five cents and are for use with or by individual pupils. Of the survey monographs, up to the date of preparing the compilation reported, 90,000 copies had been sold. This number does not include the more than 100,000 copies distributed without charge at the time of first publication. Thus, the total number of these monographs distributed by this writing exceeds 200,000 copies. Not all have gone to secondary schools, but, if they had, the average per school for the country as a whole would be about seven or eight monographs.

Notwithstanding this widespread distribution, it cannot be doubted that the report has far from attained its maximally possible usefulness. The monographs have not yet penetrated to the principals and teachers in many high schools. Because, in arrangements for publishing the report, plates were made, the report is indefinitely reproducible and copies should be continuously available. They may be purchased at reasonable cost from the Superintendent of Documents, Washington, D.C. A post-card request sent to the United States Commissioner of Education in Washington will bring a list of the monographs and the prices asked for them singly or as a set.

A Rural High School That Yields a Prophecy

It is reassuring to find lay periodicals which afford their readers a forward look in education. An instance in point is the *Farmer's Wife*, from the press of the Webb Publishing Company, St. Paul, Minnesota, which in its April issue describes in picturesque and effective manner a small high school that yields a prophecy for rural life and education. The high school described is at King Ferry, New York, and is maintained in one of the state's 149 central districts. The exposition appears under the apt title, "House of the People," and is by Carroll P. Streeter, field editor of the *Farmer's Wife*. Emphasis in the exposition is on the program of adult education, the school as a cultural and social center, the enriched program for pupils, and the financial and organizational provisions under which the school operates. We quote the article with only minor omissions.

It was "dedication night" at the new Central School building in King Ferry, New York, and farm folks for miles around had turned out for the event.

Never before had they had anything like this new schoolhouse. For several months many citizens of the community had campaigned for it, convincing the

doubters that "taxes will really be lower" (and they are), helping decide where to put the building, and then watching it go up, week by week.

Men and women whose own educations had stopped anywhere from the McGuffey's third reader to college, who had sat on slab seats and written on slates and stayed out fall and spring to work, marveled at the new home-economics living-room with its fireplace, the kitchen where girls learn to cook, the manual-training room, the library, the big gymnasium and stage, and so on.

"It's great the opportunities children have these days," one woman in a group was saying. "Makes me wish I could go back to school again myself."

Suddenly somebody had a new idea—no one seems to remember who.

"Well, why *can't* we?" she asked excitedly. "Why can't we use this new schoolhouse as well as our children can?"

Straightway they went to E. A. Frier, Jr., principal, and were delighted to find that he had been thinking the same thing. Frier went to his school board of five farmers.

"It won't cost money," he told them, "except a small amount for lighting the building. Our regular teachers will do the work without extra pay."

The upshot was that a new "student body" of 104 adults and older young folks started coming to the schoolhouse every Tuesday and Thursday night to study five courses: "World Affairs"—in which District Superintendent Clyde B. Myers discussed with them such topics as "Japan and the Far East," "Sore Spots of Europe," "America, Left or Right?"—typewriting; two classes in music —one for a new chorus and another for a new community orchestra; farming and economics, which included discussions of Secretary Wallace's policies, farm accounts, and the New York State agricultural outlook; a course in clothing, accessories, and cosmetics, which began with a fashion show.

Every school night the "students" wound up the evening by visiting and sometimes with special programs. And at the end of the course they had an evening's program, with a speaker from Cornell University, at which they received "certificates of attendance" duly signed by the principal and president of the school board. The certificates were the nearest thing to a diploma that many of them had ever had. You can find some of these certificates hanging on farmhouse walls today.

This winter all of these folks are back with many of their neighbors to study eight courses. They are going farther afield this time, including courses in Shakespeare and French.

"Our idea," as Mr. Frier explains, "is to come as near as possible to offering everything the school has to anyone who wants it and can absorb it. Not just agriculture and home economics, but everything."

In many other ways the new King Ferry school is the cultural and social center of the community. It is the "House of the People," not just of the boys and girls of school age. There the people find their winter lyceum entertainments, their library (a joint school and community affair open certain evenings as well as daytimes), their basketball games, their place to hold P.T.A. and

other meetings, their home-talent dramatics, their music, and even their talking movies. Farmers have formed a basketball league and play twice a week. And now there is planned a "Young Bachelors' Club" of young fellows enrolled in high school.

What a far cry, I thought, from the days not so long ago when a group of citizens almost had to commit the crime of "breaking and entering" to use their school building of an evening. In King Ferry (as in many another community nowadays) the schoolhouse is lighted nearly every night.

"We have $150,000 invested in this plant," Mrs. Ray A. Ellison, farm woman, pointed out to me, "and can't see why we should limit its use to eight hours a day."

This community use of the school is one sign of a new day in rural high schools, but not the only one. King Ferry illustrates some other trends just as interesting.

One concerns ways of making it possible for children to go to high school. Only 41 per cent of the farm boys and girls ever enter high school, as compared with 95 per cent in towns and cities of over 2,500 population. (Incidentally the farm children who do start stay with it a great deal better.) Some lack interest in going. Others must stay out to work at home. But by far the largest number fail to attend simply because they lack a way to get there. Both the parents and local school district feel unable to pay transportation costs so the children stay home.

Has King Ferry an answer to that? It has, and so have the other 149 central schools in New York State. It is public transportation, with the *state paying half of the bill*. Local taxpayers are unable to foot the bill alone, but they can pay half of it. The result is that King Ferry has 95 per cent of its eligible farm children in high school.

But it is equally important to consider what the children get when they arrive, and here again King Ferry has some unusual things to exhibit. How it pays for them we shall see in a moment.

Perhaps the most interesting of these offerings is called "guidance"—guidance in making important decisions, such as which vocation to choose, whether to attempt college, how to make the largest success of school work right now, and how to get along with people. . . . .

A boy or girl has several practical helps in trying to make an intelligent choice. In the eighth or ninth grade, for example, he studies a special course in vocations, which includes some that are little known and which may not be overcrowded. He reads any of the thirty books or the many government bulletins on vocations in the school library, or gets special books from the State Library Commission. . . . .

In addition, Mr. Handville [the counselor] confers individually with each pupil concerning any problem.

For this several sources of information are available: results of intelligence

tests, the record kept on each student from the first grade on, opinions of parents, and estimates of teachers.

If a boy or girl wants to farm, be a homemaker, do commercial work, or try certain trades, he can get training for them in his own high school. . . . .

Two other interesting opportunities which King Ferry children get are the chance to have better health and to learn how to enjoy music. We mention them together because both are made possible by the same device—the circuit-riding teacher who divides her time among several schools. King Ferry has five such traveling teachers.

At the request of the Parent-Teacher Association the school board hires the part-time services of two health workers. One is a nurse-teacher who visits the school twice each day, teaching the children something about caring for their own health and checking up on any pupil who feels off color. This protects not only the sick child but others who might be exposed. The service costs King Ferry but $8.25 a week. The other worker is a dental hygienist who inspects every child's teeth annually and gets those who need further care to the family dentist while the trouble can be repaired easily and cheaply. The cost of the dental hygienist is about $100 a year, the school board paying $40 of it and the P.T.A. the rest. In addition the board pays a local doctor $125 to examine the children once a year and to act as school physician in emergency cases.

There are three circuit-riding music teachers: a woman who teaches all of the vocal music, leads the choruses and orchestra, and writes and directs school musical pageants; a band teacher who gives instruction on wind instruments; and a local young fellow who gives lessons on the stringed instruments. The total cost of the music instruction is about $900 a year, and worth it if you ask parents. It was the parents who asked for it.

Fully as important as what the children learn in the classroom are the things they learn outside of it. You can study "citizenship" in a civics book, but you can practice it if you are on the student council (which handled $1,800 in money last year), or on a committee, or happen to be "mayor" or "policeman" in the student body. Getting out the school newspaper, playing on athletic teams, taking part in one-act plays, going to school parties and dances—all do something important in making a youngster able to be socially agreeable, bear himself with some confidence, and lead others. Modern high schools realize that all of these are "education" quite as much as are the time-honored three R's. . . . .

How does King Ferry do it? Well, the explanation is simple when one knows what a central district in New York is. Let us illustrate with King Ferry.

When the central district was formed there, eight smaller districts merged. They established a six-year high school and sent all children there who were beyond the sixth grade. One district kept its own one-room school for the first six grades, but the others decided to close theirs and transport all of the children. (In New York's central districts the one-room schools can be closed only by

vote of the local patrons—thus there is always a consolidation of *territory* but not always of *buildings*.)

Instead of eight school boards there is one. Farmers now have a voice in running the high school their children attend (which is something they never had while they paid tuition).

The eight districts formerly had their own school-tax rates, and they varied as much as 5 to 1; now there is just one rate for the whole area. The load is the same for everybody.

Children are transported at district expense, which, as we have seen, solves the problem of getting to high school.

The central district gets all of the state money that its eight parts formerly received. In addition the state pays one-fourth the cost of any new building (interest as well as principal), one-half the cost of transportation, and several other aids. The result is that state and federal governments are actually paying four times as much toward running the King Ferry schools as local taxpayers do! This state money, in fact, is sufficient to pay all operating expenses, leaving local people only the job of paying their share on the building.

In some central districts—King Ferry, for one—taxes have decreased on organizing the districts. In others there has been some rise, but the amount has been small in comparison with the increased advantages gained for the children.

From the foregoing it is obvious that two answers to the question of how King Ferry can have such a fine school at low cost are: *an enlarged district* and *state support*.

But there are two other important ones. One is an unusual group of teachers with vision, experience, and enthusiasm.

And the fourth explanation is perhaps the most fundamental of all. It is a lively interest by parents, expressed through an energetic P.T.A. and a progressive board of education. It is the most important one because it is the forerunner of the other three.

Home Work in Plans of Directed Study

For a quarter of a century or more the trend in secondary schools has been toward supervised or directed study. In individual schools this innovation in teaching procedure has been accompanied by the installation of the longer class period of fifty, sixty, or more minutes, although it is now clear enough that many advantages of directed study are attainable with shorter periods. In the transition to the new procedure attention was given, first, to what should be done by pupil and teacher during the class period, and it was only natural, even if unfortunate, that appropriate responsibilities of pu-

pils for study outside the class period, either in the study hall or at home, should be left for later development.

Among the high schools that have for a number of years been at work at both ends of the problem, that is, directed study in the classroom and the home work of pupils, is the Riverside-Brookfield High School at Riverside, Illinois. Glenn K. Kelly, principal, has recently prepared a brief statement of the outcomes of the experience, and we are permitted to reproduce the statement here.

The reaction of pupils of all levels, particularly those in the high school, is that home work under the directed-study plan is not necessary. The parents are disturbed because their children claim they have no home-work responsibilities. The teacher, although having fairly well mastered the technique of directed study, finds himself in an embarrassing position when confronted by the parents who demand to know why their children are not assigned definite tasks for preparation at home. Advocates of directed study argue that home work should be minimized because a large majority of the pupils do not have facilities or proper conditions for home work and because much of the home work is likely to be done by friends and relatives and not by the pupils. A small but influential minority of parents has the ready rejoinder that these are not the conditions in their homes and that they are extremely desirous for their children to be given home work in order that the children may make the best use of the time in school and in order that they will have something to do in the evening which will give the parents an excuse to keep them at home.

The plan of directed study often breaks down on this question of home work, or there arises a conflict either between the school and the parents or between the teacher and the administration, depending of course on the stand which the teacher takes in the matter of home-work assignment.

If the problem of home work is to be effectively solved, there must be a thorough understanding of the fundamental principles involved and possibly an understanding of the historical background which is responsible for the home-work plan of study.

Thought on the problem will be clarified by considering, first, the type of instruction carried on in the early schools. Pupils in general prepared their lessons so that they could come to the master's desk and recite them by rote. Preparation was largely a procedure of memorization of content and not one of understanding content. Teachers in those schools had little or no preparation. Many of them were indentured servants. Parents were often better educated than the teachers. The function of the teacher was merely to perform a task for which the parent had no time, namely, hearing the pupil recite material which he had memorized either by himself or under the guidance of his parents. Later this procedure was transferred entirely to the school, where a part of the memoriza-

tion, as well as the recitation, was prepared under the direction of the teacher. A large amount of preparation by the pupil was still required out of school hours.

Later improvement—and about the only improvement over this procedure until recently—was the introduction of the question, which was used to determine whether the pupil understood a measure of the material which he had memorized. Since it was found that mere memorization did not insure understanding, memorization was eventually dropped from the procedure, and the question was given almost the entire time of recitation. Under this procedure questions were fired at the class, presumably for the purpose of stimulating thought on the part of all the members of the class. Comprehensive answers were not generally required because in order to distribute the questions covering the day's assignment over the entire class, it was found necessary to break the material up into fragments. The writer had the experience as a pupil of being severely reprimanded in a high-school class because he did not confine his answer to the narrow limits of the question asked. Much literature has been written on how to improve the technique of questioning, and a great deal of time has been spent by teachers in reading and listening to lectures on this topic. The art of questioning undoubtedly has its place in the teaching process, but it should be confined to individual instruction since it can rarely be effective in general classroom procedure.

The directed-study idea carries with it two fundamental assumptions. The first is that the classroom is a laboratory in which the teacher directs the laboratory activities of the pupils, such as reading and organizing material in history, performing experiments in chemistry, developing an appreciation of literature, studying the problems of home economics, learning a new language, or having experiences in manual activities. The other assumption is that the habits, the attitudes, and the interests that have been developed in the classroom should be carried into life outside the school. These two assumptions imply three main types of home work in the school program.

The first kind of home work is practice. One illustration will suffice to define what is meant by "practice." If a pupil wishes to perfect his ability in writing themes in English, he should practice on his themes at home. Actual writing, however, should take place in the classroom under the direction of the teacher. Such themes and only such themes as are written in the classroom should be accepted by the teacher for appraising the ability of the pupil in theme-writing. The same statements will apply to mathematics and to the use of the various types of workbooks and laboratory manuals in the laboratory subjects.

The second type of home work implied is supplementary work. Pupils in courses in history, science, English, woodwork, home economics—in fact, all the subjects in the curriculum—should be encouraged to take home with them library books containing interesting and supplementary material which pertain either directly or indirectly to the courses which they are studying.

In the third type of home work pupils who show a deep interest and ability in various fields should not only be encouraged to do practice work and supplementary work at home but should be encouraged to give to a field of particular interest more intensive and extensive study than it is possible for them to give during school hours.

In the eleven years of experience which I have had in dealing with this matter of directed study and its problem of home work, I have come to believe that the foregoing analysis and suggestions will solve the problem of home work for any teacher in any of the secondary-school grades.

Help on High-School Clubs

High-School Clubs is the name of a United States Office of Education Bulletin (Number 18, 1934) by Maris M. Proffitt, educational consultant and specialist in guidance and industrial education. In the bulletin are reported the results of an investigation of such clubs made in 1933. Almost nine hundred high schools, with enrolments totaling almost a million pupils, are represented in the evidence reported on the number, the extent, and the kinds of clubs. In addition the bulletin contains examples of club programs secured by follow-up letters of inquiry to about a hundred schools. Copies of the bulletin may be purchased for ten cents and should be ordered from the Superintendent of Documents, Washington, D.C.

Pictorialized Content for the Social Studies

Schools have long had need for seasonable and profusely illustrated materials of instruction in the social studies. It is impossible to keep textbooks strictly up to date in this dynamic and changing field, and even the best of textbooks would have difficulty in achieving or justifying the extent of illustration that appears to be essential adequately to objectify the content of the social studies for children's minds. Supplementation of textbook content by some means of this sort is essential. The Society for Curriculum Study now meets the need in a new monthly publication entitled *Building America*, each issue of which will deal with some timely and important national problem. A "special edition" on "Housing," intended to exemplify the publication, has been issued. Examination of this edition warrants the statement that the most notable feature of the new series is the effective way in which it uses pictures to

vivify and to make realistic the social facts and ideas contained in the printed text.

The general purpose and scope of the new undertaking is announced as follows:

Building America pictorial studies are specifically designed to meet teachers' needs for organized visual aids and to supply scientifically constructed studies of basic activities and important institutions of American life today.

An outstanding contribution of *Building America* to the social studies is the pictorial illumination of existing subject matter. Carefully selected pictures contribute to an insight of social phenomena by supplementing the printed or spoken word. About three-quarters of the page space of every issue is devoted to photographs, maps, charts, or picture-graphs. In addition to the pictorial presentation, the printed text, one-quarter of the page space, further elaborates the theme of the issue by showing the relationship of one body of facts to other facts and the significance of all the facts to human welfare.

Building America publications present the inspiring pictorial story of the positive achievements of American ingenuity and ideals. They will describe the present status as well as the inherent possibilities in our wealth, power, and skill for improving the quality of American life, materially and culturally.

Building America picture studies are an answer to the insistent and widespread demand of educators for a new type of classroom material that will give students a working knowledge of social and economic principles and institutions and lead them to evaluate critically any proposals which may be made for the improvement within the area of the subject treated. The present trend toward closer integration of all agencies in our interdependent world points to a society that will demand the highest informed intelligence on the part of our citizens. *Building America* is designed to develop informed citizens. . . . .

Every issue of *Building America* is presented to the student as a problem to be solved. The facts and ideas presented in each number and the questions raised are all intended to challenge the student's thinking and to help him enter upon some constructive line of thought toward a solution of these problems. The reader is made aware of the problem of better utilizing our present abundance and of improving the physical and cultural welfare of our people.

The facts presented in the *Building America* series are the result of painstaking research into the most reliable sources available. In addition, these materials are carefully reviewed by a representative editorial board and by reputable authorities on the topics treated.

The following subjects will be treated in future issues of *Building America*, beginning in October, 1935.

Food.—The scientific and technical progress in production and the increasing efficiencies of distribution; the nation's food budget in terms of our productivity and our needs.

Men and Machines.—The remarkable developments in factory, field, and mine, and some of the economic and social problems and promises resulting from mechanization.

Transportation.—The conquests of space and their effects upon the lives of people.

Health.—A study of the effort to maintain individual and social health.

Communication.—The progress toward instantaneously connecting distant places both through sound and vision with the resulting changes in society.

Power.—The harnessing of natural forces, the development of familiar forms of power, especially of that genie of the power age—electricity.

Recreation.—Universally interesting study of healthful and creative leisure.

Youth Faces the World.—Some of the personal problems of youth in relation to self-development and socially useful living.

The new enterprise, *Building America*, is a co-operative, non-commercial project of the Society for Curriculum Study, a national professional organization of educators interested in curriculum construction. Among the members of the society are curriculum specialists in public schools, in universities, and in teachers' colleges, members of boards of education, superintendents of schools, principals, supervisors, teachers, and federal and state officers of education. Any surplus income from the project over the cost of publication and distribution will be used to increase the size of the picture textbooks and ultimately to reduce the cost to schools.

The yearly subscription is $1.50. Special rates are offered for a number of subscriptions or for a number of single copies. The editorial offices of *Building America* are located at 425 West 123d Street, New York City.

Conference of Administrative Officeps of Public and Private Schools

During the week of July 15–19, 1935, a conference of administrative officers of public and private schools will be held by the Department of Education of the University of Chicago in the Club Room of Judson Court, College Residence Halls for Men, for the discussion of important problems in school organization, administration, and supervision. The programs will consist, in the forenoons, of lectures by members of the Department of Education and visiting instructors and, in the afternoons, of separate round-table discussions for superintendents and principals. Programs of the conference will be available about May 1 and will be mailed to anyone

applying to Professor W. C. Reavis, Department of Education, University of Chicago.

The conference will have as instructors Ernest O. Melby, dean of the School of Education, Northwestern University; Richard W. Bardwell, superintendent of schools, Madison, Wisconsin; James B. Edmonson, dean of the School of Education, University of Michigan; Dr. Edward L. Compere, assistant professor of surgery, University of Chicago; Charles H. McCloy, research professor of anthropometry and physical education, State University of Iowa; Albert M. Hillhouse, director of research for the Municipal Finance Officers' Association, Chicago, Illinois; Charles S. Ascher, secretary, Public Administration Clearing House, Chicago, Illinois; Harold E. Akerly, assistant superintendent of schools, Rochester, New York; Matthew P. Gaffney, superintendent of the New Trier Township High School, Winnetka, Illinois; and members of the Department of Education of the University of Chicago.

Room and board will be provided, to the extent of the available capacity, in Judson Court for the week, Monday to Friday, for sixteen dollars. Reservations may be made through William J. Mather, Bursar of the University of Chicago.

The conference is open, without fee, to students registered in the summer quarter and to administrative officers of public and private schools who desire to attend.

Who's Who in This Issue

H. W. Powers, instructor in science at the high school at Sycamore, Illinois. C. B. Allen, associate professor of education at Western Reserve University. T. G. Foran, professor of education at the Catholic University of America. Brother Colombiere O'Hara, instructor in mathematics at St. Xavier High School, Louisville, Kentucky. Henry C. Mills, assistant professor of education at the University of Buffalo. M. L. Altstetter, working under the committee directing the Co-operative Study of Secondary School Standards, with headquarters at the George Peabody College for Teachers, Nashville, Tennessee. Bruce White, research assistant at the University of Washington. Frank N. Freeman, professor of educational psychology at the University of Chicago. G. T. Buswell, professor of educational psychology at the University of Chicago.

THE OFFERING IN TRADE, VOCATIONAL AND TECHNICAL SCHOOLS

H. W. POWERS
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PURPOSE AND NATURE OF THE STUDY

The rapid growth of vocational and technical education in the United States during the past quarter-century has resulted in a need for information concerning some of the practices in the curriculum offerings in schools of secondary grade providing these specialized types of training. In the present study an analysis was made of the curriculum offerings in a selected group of ninety-three public trade and vocational schools, public technical schools, and public technical high schools, distributed to seventy cities in twenty-three states. These schools were considered in two groups, namely, seventy-three public trade and vocational schools and twenty public technical schools and public technical high schools. The schools include only a minority of all such institutions in operation but may be regarded as representative, since they are included in Proffitt's pamphlet dealing with schools of these types.[1] Proffitt's list was used because his pamphlet contains information concerning each school that could be used to round out the types of information gathered especially for the present study.

The specific aims of this study were to determine (1) how certain practices, such as requirements for admission and graduation and the length of time specified for the completion of curriculums, compare in these two types of schools; (2) what curriculums are offered in these schools and the frequency with which these curriculums occur; and (3) which subjects are offered in connection with certain of the curriculums found most frequently.

Since the information for this study was drawn from printed or mimeographed materials furnished by the schools, certain limita-

[1] Maris M. Proffitt, *Technical and Trade Schools*. United States Office of Education Pamphlet No. 44 (1933).

tions are to be recognized. Present conditions may not be represented in all respects because some schools do not issue or revise their printed material yearly. Certain difficulties were experienced in tabulating and in interpreting the data secured. The descriptions of subjects caused general difficulty; for example, the expression "Mathematics III–IV" does not have the same meaning in all schools and does not convey clearly to the investigator what material is being offered to the pupil. The investigator, however, avoided making personal interpretations without justification.

DESCRIPTION OF THE SCHOOLS

Local or state control.—All the schools represented in this study are public schools, and the majority are operated as parts of the local school systems under the supervision of the local boards of education. An exception to this rule is found in the Newark Technical School, which is administered by the Board of Trustees of Schools for Industrial Education of Newark, New Jersey. Some of the institutions represented in this study are state institutions, namely, the Alabama School of Trades at Gadsden, three specialized nautical schools (the Massachusetts Nautical School at Boston, the State Nautical School at Philadelphia, and the New York State Merchant Marine Academy at New York City), and six of the eleven trade schools established by the state of Connecticut. These state institutions are controlled either by the state department of education or by the state board of education. The five Wisconsin vocational schools in this study typify the system of that state; these schools are operated by state and local boards of vocational education which are distinct from the boards in charge of other local schools. A large proportion of the schools in this study, whether local or state controlled, receive financial support either from the state or from the federal government or from both.

Types of curriculum organization.—According to the types of programs of studies characterized by Koos,[1] the schools used in this study furnished examples of three types of curriculum organization. The single-curriculum type, in which the entire offering is prescribed

[1] Leonard V. Koos, *Private and Public Secondary Education*, pp. 143–46. Chicago: University of Chicago Press, 1932.

and required, is illustrated by the two-year vocational high schools of Cincinnati, Ohio. The pure multiple-curriculum type, in which there is a choice of curriculums but no choice within the curriculum, was in use in the majority of schools in the trade and vocational group. The combination-curriculum type, which provides for a choice of curriculums as well as for some election of subjects within the curriculum, was generally found in the group of technical schools and technical high schools.

The term "curriculum" is used here to designate an entire group of subjects taken in connection with the training in a particular occupation or occupational group. For example, an automobile-mechanics curriculum might consist of automobile shop, English, related mathematics, related science, mechanical drawing, and American history.

Length of curriculums.—Considerable variation was found in the length of time required for completing the curriculums. The trade and vocational schools offered slightly more two-year curriculums than curriculums of any other length, while the four-year curriculum was most typical of the technical schools and the technical high schools. A few schools in both groups had curriculums of two or more different lengths side by side, for example, some three-year curriculums along with a group of unit-trade curriculums. "Unit-trade curriculums" are those in which the requirements for a diploma or for graduation consist in a certain number of hours of satisfactory school work divided between work in the shop or the laboratory and classroom work in academic and related subjects. The amount of time was found to vary from 3,000 to 5,400 hours of class instruction. The Passaic Vocational School at Passaic, New Jersey, specified a minimum of 1,140 clock hours a year in the unit-trade curriculums.

Requirements for admission and graduation.—An analysis of the entrance requirements for the schools used in this study showed that approximately a third of the trade and vocational schools required that pupils seeking entrance be at least fourteen years of age and that they be eighth-grade graduates. A few schools had lower minimum-grade requirements, while others had minimum-age requirements of either sixteen or seventeen years. The public technical schools and technical high schools in general required the completion

of the eighth grade for admission to the four-year schools and ninth-grade graduation for admission to the three-year schools. The sixteen-year age requirement was rather general among evening schools.

Several types of graduation requirements were found. The variation in the amount of time required for graduation in unit-trade curriculums has already been mentioned. Some schools having unit-trade curriculums granted diplomas on the satisfactory completion of the prescribed content of the curriculum, as did some vocational schools not of the unit-trade type. A few of the vocational schools awarded the vocational-school diploma on the completion of sixteen units. The Industrial High School at Albany, New York, required the completion of fourteen units for the state certificate. The technical schools and technical high schools usually offered a rather wide range of courses and curriculums, and most of these schools stated that graduation depended on the successful completion of a curriculum. The specific requirements in terms of credits or semester points varied for the schools and for the various curriculums within the same school.

Enrolments in day and night classes.—The enrolments of the schools considered in this study furnish significant information concerning the extent to which the public is taking advantage of the training and services offered by these schools. The enrolment data were obtained from Proffitt's pamphlet.[1] The total enrolment of these schools at the time Proffitt's data were collected (early in 1933) was 116,701. It is of interest to note that the 73 public trade and vocational schools of the present study accounted for 59,526 pupils, or better than half the total enrolment, while the twenty public technical schools and technical high schools enrolled the remaining 57,175. In the larger group of schools the total night enrolment (25,813) was about three-fourths of the day enrolment (34,196). The total night enrolment for the smaller group in this study was 13,868, which was about a third of the total day enrolment (43,676). It appears that the public trade and vocational schools were, at the time represented by the evidence reported, giving considerably more night instruction in proportion to their day instruction than were the pub-

[1] Maris M. Proffitt, *op. cit.*, pp. 14–17.

lic technical schools and technical high schools. Sixty-three per cent of the trade and vocational schools and 60 per cent of the technical schools and technical high schools were offering both day and night classes. The enrolments in day and night classes are shown in Table I.

TABLE I

DISTRIBUTION OF SCHOOLS ACCORDING TO ENROLMENTS IN 1933 IN DAY AND NIGHT CLASSES

Enrolment	Number of Trade and Vocational Schools		Number of Technical Schools and Technical High Schools	
	Day Classes	Night Classes	Day Classes	Night Classes
5,000 or more	0	0	2	0
4,000–4,999	0	0	1	0
3,000–3,999	0	0	2	0
2,000–2,999	3	1	5	3
1,000–1,999	3	8	2	2
900– 999	2	3	1	1
800– 899	3	1	0	0
700– 799	3	3	0	1
600– 699	4	1	2	0
500– 599	9	1	3	1
400– 499	6	5	0	3
300– 399	6	5	0	3
200– 299	6	4	1	0
150– 199	7	4	0	0
100– 149	10	7	0	0
50– 99	10	3	0	0
Fewer than 50	0	1	0	0
Total	72	47	19	14

THE CURRICULUMS OFFERED

An analysis of the printed materials furnished by the schools showed that a total of seventy-five different curriculums were offered by one or more schools in the two groups studied. The number of schools in the two groups offering each curriculum is shown in Table II. Curriculums in electricity, machine shop, and automobile mechanics were the curriculums most frequently offered, namely, 54, 53, and 50 times, respectively. The investigator was obliged to use a certain amount of freedom in grouping together curriculums which seemed to be closely related. For example, "retail selling" was

TABLE II

CURRICULUMS OFFERED IN 73 PUBLIC TRADE AND VOCATIONAL SCHOOLS AND IN 20 PUBLIC TECHNICAL AND TECHNICAL HIGH SCHOOLS AND NUMBER OF SCHOOLS OFFERING EACH

Curriculum	Trade and Vocational Schools	Technical and Technical High Schools	Total
Electricity	38	16	54
Machine shop	40	13	53
Automobile mechanics	40	10	50
Printing	30	11	41
Machine drafting	25	12	37
Carpentry	29	6	35
Architectural drafting	22	11	33
Cabinet-making	13	10	23
Woodworking	17	4	21
Pattern-making	11	7	18
Sheet metal	13	5	18
Plumbing	11	2	13
Aeronautics	8	4	12
Commercial	6	6	12
Welding	7	4	11
Brick masonry	9	1	10
Commercial art	4	6	10
Industrial chemistry	4	6	10
Painting and interior decorating	9	1	10
College-preparatory	2	5	7
Dressmaking	6	1	7
Automobile electricity	4	2	6
Cooking	6	0	6
Foundry	2	4	6
Household arts	2	4	6
Power sewing	5	1	6
Showcard and sign writing	5	1	6
Textiles	4	2	6
Agriculture	2	3	5
Beauty culture	5	0	5
Costume design	3	2	5
High-school technical	0	5	5
Home economics	0	5	5
Salesmanship	4	1	5
Art	1	3	4
Music	0	4	4
Tailoring	4	0	4
Cafeteria management	3	0	3
Deck corps	3	0	3
Engineer corps	3	0	3
General academic	0	3	3
Radio mechanics	3	0	3
Secretarial	2	1	3
Steam-power engineering	1	2	3
Clothing	2	0	2
Foods	2	0	2

TABLE II—*Continued*

Curriculum	Trade and Vocational Schools	Technical and Technical High Schools	Total
Forging	0	2	2
General office work	2	0	2
Jewelry making and design	1	1	2
Nursing	1	1	2
Toolmaking	0	2	2
Treatment of metals	2	0	2
Upholstering	2	0	2
Accounting	0	1	1
Advanced college-preparatory	0	1	1
Baking	1	0	1
Bookbinding	1	0	1
Engineering college-preparatory	0	1	1
Floriculture	1	0	1
General shop	0	1	1
Horticulture	0	1	1
Lithography	0	1	1
Millinery	1	0	1
Occupational therapy	0	1	1
Ornamental design	1	0	1
Paper-hanging	1	0	1
Photography	0	1	1
Plastering	1	0	1
Pottery-making	0	1	1
Proofreading	0	1	1
Science	0	1	1
Shoe-repairing	1	0	1
Special gymnasium	0	1	1
Surveying	0	1	1
Telegraphy	1	0	1

classed as "salesmanship," and "machine drawing" was grouped with the machine-drafting curriculums. Since 63 per cent of the trade and vocational schools considered enrol only men and boys, one would expect to find only a small proportion of curriculums pertaining to home activities for women and girls, but the proportion of such curriculums did not appear as prominently as might have been expected. It was difficult to judge from the printed descriptions the extent of essential differences among such curriculums as "household arts," "home economics," and "homemaking" or between curriculums entitled "cooking" and "foods." The woodworking curriculum in some schools apparently combined training in carpentry and cabinet-making. Those curriculums termed "deck

corps" and "engineer corps" were found in the specialized nautical schools. Forty-one, or more than half of all the curriculums, were offered fewer than five times each.

The number of curriculums offered in a school varied considerably. The largest number of curriculums offered by any one school was nineteen; one school in each of the two groups furnished such a broad program. The median number of curriculums offered in a school was 6.6 for the trade and vocational schools and 12.0 for the technical schools and technical high schools. Thirty of the public trade and vocational schools offered seven or more curriculums, while thirty-three offered fewer than six. Nine of the technical schools and technical high schools had thirteen or more curriculums, while ten had fewer than twelve curriculums.

A grouping of the seventy-five curriculums which classified the curriculums as industrial, household, art and music, academic and miscellaneous, commercial, and agricultural revealed that the majority of the curriculums were industrial. Forty curriculums, or more than half the entire list of seventy-five, were placed in the industrial group. The household group followed next, with ten curriculums.

REQUIRED AND ELECTIVE SUBJECTS

Plan of analysis.—From the list of seventy-five curriculums offered, the nineteen curriculums which were found to occur ten or more times were selected for detailed study. The subjects, required and elective, comprising each of these curriculums were studied. The required subjects were classified as "academic" or "non-academic." Those subjects were called "academic" which belong to the five main groups: English, foreign languages, mathematics, science, and social studies.

Subjects required of all pupils.—The subjects required of all pupils, regardless of the curriculum followed, are shown in Table III. English was required by approximately 70 per cent of the trade and vocational schools, while an additional 12 per cent specified related English. The technical schools almost uniformly prescribed English for all pupils. Related mathematics was required by nearly 70 per cent of the trade schools, whereas algebra and geometry were favored by

TABLE III

NUMBERS AND PERCENTAGES OF 73 PUBLIC TRADE AND VOCATIONAL SCHOOLS AND OF 20 PUBLIC TECHNICAL AND TECHNICAL HIGH SCHOOLS REQUIRING CERTAIN SUBJECTS OF ALL PUPILS

SUBJECT	TRADE AND VOCATIONAL SCHOOLS		TECHNICAL AND TECHNICAL HIGH SCHOOLS	
	Number	Percentage	Number	Percentage
	Academic Subjects			
English:				
English	52	71.2	19	95.0
Related English	9	12.3	0	0.0
Penmanship	1	1.4	0	0.0
Spelling	1	1.4	0	0.0
Mathematics:				
Related mathematics	50	68.5	1	5.0
Algebra	5	6.8	6	30.0
Arithmetic	6	8.2	1	5.0
General mathematics	2	2.7	0	0.0
Geometry	3	4.1	5	25.0
Trigonometry	2	2.7	1	5.0
Science:				
Related science	34	46.6	3	15.0
Chemistry	1	1.4	1	5.0
General science	4	5.5	3	15.0
Physics	3	4.1	1	5.0
Physiology	1	1.4	0	0.0
Social studies:				
American history	13	17.8	13	65.0
Citizenship	3	4.1	0	0.0
Civics	40	54.8	10	50.0
Commercial law	19	26.0	2	10.0
Economics	13	17.8	7	35.0
Industrial geography	11	15.1	1	5.0
Industrial history	12	16.4	0	0.0
Public relations	0	0.0	1	5.0
Social science	6	8.2	0	0.0
World-history	0	0.0	2	10.0
	Non-academic Subjects			
Art	2	2.7	1	5.0
Blueprint-reading	9	12.3	0	0.0
Drawing:				
Related drawing	21	28.8	6	30.0
Freehand drawing	4	5.5	0	0.0
Mechanical drawing	5	6.8	3	15.0
Sketching	3	4.1	0	0.0
Electricity	3	4.1	0	0.0

TABLE III—*Continued*

Subject	Trade and Vocational Schools		Technical and Technical High Schools	
	Number	Percentage	Number	Percentage
	Non-academic Subjects—*Continued*			
Hygiene	19	26.0	1	5.0
Law of the sea	1	1.4	0	0.0
Library	2	2.7	0	0.0
Music	1	1.4	2	10.0
Naval architecture	1	1.4	0	0.0
Navigation	3	4.1	0	0.0
Occupational opportunities	3	4.1	0	0.0
Physical and health education	17	23.3	11	55.0
Safety and first aid	12	16.4	0	0.0
Sanitation	1	1.4	0	0.0
Seamanship	3	4.1	0	0.0
Stowage of cargo	2	2.7	0	0.0
Strength of materials	1	1.4	0	0.0
Textiles	0	0.0	1	5.0
Trade materials	1	1.4	0	0.0
Trade theory	9	12.3	0	0.0
Tryout shop	1	1.4	1	5.0

the technical schools and technical high schools. Nearly half the trade schools required related science in all curriculums. Among the social studies, civics was required by 54.8 per cent of the trade schools and by 50 per cent of the technical schools. American history was found in all curriculums in only 17.8 of the trade schools as compared with 65 per cent of the technical schools. Related drawing was represented by nearly equal percentages in the two groups of schools. Physical and health education was required of all pupils by 23.3 per cent of the trade and vocational schools and by 55 per cent of the technical schools and technical high schools.

As means of providing a more generalized basis for comparing the academic and the non-academic subjects required in the two groups of schools, the following plan was used. The total numbers of the academic and the non-academic subjects occurring in the curriculums were obtained. Certain subjects in the academic groups, such as related English, related mathematics, and related science, the exact content of which was not known, were not considered. Like-

wise, such subjects as hygiene, library, music, and physical and health education were not counted in the non-academic group, since it could not be assumed that these subjects have a direct bearing on the specialties represented in the curriculums. The total numbers of subjects thus obtained were then divided by the total number of curriculums in each group of schools. It was found that the group of 73 public trade and vocational schools offered a combined total of 326 curriculums made up of 957 academic subjects and 905 non-academic subjects. The average number of subjects to a curriculum was 29.4 for the academic subjects and 27.8 for the non-academic subjects. The 20 public technical schools and technical high schools offered a total of 135 curriculums, which were composed of 739 academic subjects and 412 non-academic subjects, or an average of 54.7 academic subjects and 30.5 non-academic subjects to a curriculum. Among the trade and vocational schools the number of academic and non-academic subjects per curriculum was approximately the same, while in the group of technical schools and technical high schools the number of academic subjects to a curriculum was approximately 1.8 times the number of non-academic subjects. This ratio indicates the relative emphasis placed on academic subjects by the technical schools and technical high schools. It discloses an intent to make the curriculums in this group of schools in larger part general and is in harmony with the typically greater length of curriculums in these schools and the aim of some of the curriculums to prepare for engineering and other colleges.

Elective subjects.—Comparatively few of the seventy-three public trade and vocational schools were found to provide for electives. Hence, conclusions with respect to elective subjects were based on the group of twenty public technical schools and technical high schools, of which fourteen, or 70 per cent, provided for electives in some or all of the curriculums offered. The sixteen curriculums which occurred five or more times in the latter group of schools were analyzed to discover the elective subjects provided. Typical provisions for electives are shown in the following list, the electricity curriculum serving as the example. This curriculum was offered by sixteen schools in the group of technical and technical high schools, eight of which provided some election of subjects.

SUBJECTS OFFERED AS ELECTIVES IN ELECTRICITY CURRICULUM IN EIGHT PUBLIC TECHNICAL AND TECHNICAL HIGH SCHOOLS

(Each line or group of subjects indicates electives in one school)

NINTH YEAR

Art, vocal music, instrumental music.
Physical education, military training, or band.
Vocational mathematics or algebra; general science or biology.
Printing, sheet-metal work, or woodworking.
Industrial arithmetic or algebra.

TENTH YEAR

Shop mathematics or geometry.
Physical education or military training.
Biology, Spanish, art, vocal music, instrumental music.
Physical education, military training, or band.
Algebra or geometry.
General mathematics or geometry.

ELEVENTH YEAR

Physical education or military training.
Biology, physics, chemistry, Spanish, drawing, art, vocal music, instrumental music.
Physical training, military training, or band.
Intermediate algebra, trigonometry.
Solid geometry, algebra; five points from modern history (5), twelfth-grade English (5), advanced mathematics (5), glee club ($2\frac{1}{2}$), orchestra ($2\frac{1}{2}$), band ($2\frac{1}{2}$), voice culture ($2\frac{1}{2}$), a cappella club (1), journalism ($2\frac{1}{2}$), public speaking (3), dramatics ($2\frac{1}{2}$), physical training (2), during last two years.
English VI or business English; physics or chemistry; one from drafting, architecture, advertising, Latin, Spanish, public speaking, and salesmanship.

TWELFTH YEAR

Mechanical drawing, bookkeeping, or salesmanship.
Physical education or military training.
Journalism, public speaking, chemistry, physics, biology, Spanish, drawing, retail selling, art, salesmanship, vocal music, instrumental music.
Physical education, military education, or band.
English IV.
Intermediate algebra, trigonometry.
American history, civics, or economics; chemistry or physics; one from English, journalism, and eleventh-year subjects.

Physical education was elective in three schools, one of which combined physical education with military training and band. In three schools the electives offered in the tenth year were entirely in mathematics. It may be noted that in general the number of choices of subjects increases during the eleventh and the twelfth years. One school which allowed a choice of but three subjects in the ninth year extended the number of electives to twelve in the twelfth year. The electives specified by a given school were found to be practically the same for the various curriculums offered, particularly for the industrial curriculums. Academic subjects were more often offered as electives than were non-academic subjects. Among the academic subjects frequently offered were chemistry, biology, English, and elementary algebra.

SOFTNESS IN HIGH-SCHOOL SUPERVISION

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Written and oral reports made by university students in beginning classes in supervision tend to be imbued with "softness." That the literature of the subject encourages notions of sentimentalism, weakness, and childishness, which are not always recognized as such, is evidenced by extracts from student reports and replies to questionnaires by principals.

Definitions which seem best to describe "soft supervision" are "bland, balmy, feeble," and "lacking in mineral salts." For example, one principal reports his program of supervision in these words:

> Nothing remarkable. (1) Exercise some care in selecting teachers and in assigning their work. (2) Drop into rooms for a few minutes and make minor suggestions. (3) Write an occasional faculty letter on matters of general interest. (4) Give out an occasional outline on some topic such as "Final Examinations," "The Recitation," "The So-called 'Normal Curve,' " etc.

The teacher-training institutions must shoulder a good share of the blame for the present emasculated attitude toward supervision because of the idealistic training which they give to prospective teachers. A city high school principal expresses his opinion as follows:

> Through my fourteen years as head of the department I have had a great deal of difficulty with inexperienced teachers. The fault lies with the methods in the schools of education. The students in such schools are taught to deal with an imaginary, ideal pupil. They are not prepared to meet the actual conditions in our large city schools. My problem has been to teach them to adapt themselves to the crude conditions before them in the classroom.
>
> I have one new man this year who is learning what it means to keep a class busy without following book methods. Another new man is so full of the educational theory of a nearby graduate school of education that he spends half of the period in talking to create a proper "receptivity of mind" for the lesson he is going to teach. Meantime the class has got away from him.

Six examples of softness commonly found in student attitudes are discussed briefly in the following pages.

1. *Teachers desire soft qualities in supervisors.*—Studies of the personal qualities which teachers desire in supervisors give a prominent place to sympathy and, rather strangely, a minor place to professional knowledge of supervision, professional preparation, etc. Naturally, the beginning student infers that sympathy is the most desirable quality. This quality in itself is not amiss if "sympathy" is taken to mean "in accord" or "agreeable to one another," but the interpretation tends to smack of "commiseration, pity, or feeling of compassion for another's sufferings." Sympathy must have a place in any co-operative undertaking if understanding and mutual progress are to result, but a supervisor can show sympathy without being emotional or soft. Probably the reason behind the popularity of sympathy lies in the fact that the teachers replying to questionnaires had not received professional supervision to any appreciable degree. Therefore, of the two extremes so commonly found—soft supervision and autocratic trouble-finding—the former was chosen because it was exactly as constructive and much less irksome.

The belief that a supervisor should always be in the background is another example of softness. The "background complex" is illustrated by the following statement: "In the conference the teacher does a good deal of the talking if it is possible to get her to do so. I remain in the background as much as possible, so as not to influence her too much." The knowledge and the personality of a leader should focus attention on his capabilities. Modern supervision should tolerate neither the laissez faire attitude of one principal who believes that "the teacher must be permitted to work out her own salvation even when disaster seems imminent at times," nor the idea that the supervisor should be a nonentity.

Another notion is that the supervisor should always be smiling, pleasant, and humorous. Nothing is more obnoxious to serious, busy people than a Cheshire-cat visage on the part of their leader. No one, except a lifeless and brainless picture, can smile all the time. There is no need to be gushy or giddy. Supervision should be essentially serious but neither frivolous nor glum. Humor has its place in professional work, but it should never be permitted to serve as a mask for ignorance.

2. *Supervisory criticism should always be constructive, never destructive.*—This statement, as expressed, would need no comment if it were taken for what it really means. However, students are inclined to interpret criticism in terms of softness. They seem to think that there is a sharp distinction between constructive and destructive criticism, with the former consisting of complimentary, kindly, favorable comments and the destructive type steeped with malice aforethought, and both tinged somewhat with emotion.

Criticism is constructive or destructive in its effects rather than in its nature or temper when given. Even destructive criticism of the tearing-down type has its place in rare instances when used without emotion and after careful thought. Naturally, if the criticism ends with discouragement, inaction, or personal feelings, it is destructive whether or not the supervisor brands it as such. If, on the other hand, the situation is eventually improved, the criticism is constructive. There seems to be no reason why criticism must be spineless, vacillating, or evasive on the one hand, or cruel and vicious on the other. Teachers can take frank criticism when it is given properly. In fact, they welcome it. One congenial attitude is expressed as follows: "The entire high school is known as the friendly school, and all discipline is of quiet, personal appeal—no 'bawling out.' The same principle applies to the supervision of teachers."

An important danger in avoiding a professional attitude when giving criticism is that the interview may degenerate into a contest of mutual emulation. The effect of such an interview is destructive because little is said which will result in improvement. A teacher is of sufficient maturity to be told immediately the favorable or the unfavorable comments. Since most supervisory criticism need not be severe, hedging is especially distasteful. If there is any adverse criticism to be made, it should be offered at once. Delayed criticism is a form of persecution to an intelligent person.

3. *Supervisory visits disrupt the recitation.*—Immature students of supervision tend to believe that supervisory visits to the classroom necessarily disrupt the recitation. A principal says, "The very presence of the principal or the supervisor in the room creates an abnormal teaching situation." This statement may be true to some extent of rooms which have but few visitors. When frequent visits are

the rule, however, the visitors become merely a part of the total situation—accepted but largely ignored. The reaction to visitors is a matter of training. For example, the principal of a large senior high school reports: "I make it a habit to visit the classrooms regularly. My appearance in the room occasions no disturbance or nervousness on the part of the teacher, who feels assured of my assistance and cooperation after our first meeting." Teachers accustomed to helpful supervision not only welcome visits but request them.

The student may be led to believe that the supervisor should do no writing whatever in the presence of the teacher. Expressions of this state of mind are somewhat like the following: "I make mental notes (seldom use pencil in classroom)." "If note-taking is necessary in the classroom, it should not be noticed by the teacher or pupils." Frequently the literature advises the supervisor to "make mental notes," to write surreptitiously, or to ask the teacher's permission before recording observations. This attitude seems to infer that the supervisor has no real business in the room. Mental notes cannot substitute for detailed records made carefully at the time. If good supervision calls for note-taking in class, the supervisor should not hesitate to make the necessary memoranda. Teachers soon learn that such memoranda properly made are subsequently of great value in helping them to improve their work.

Educational literature is filled with arguments for and against the unannounced visit, with a tendency to emphasize its limitations. Many supervisors believe that the unannounced visit should be abolished. Here, again, there is confusion resulting from the failure to distinguish between means and ends. The visit is only a means and does not become truly supervisory until something is done as a result. If the supervisor wishes to see teaching done normally, whether it is good, bad, or indifferent (and that situation is what the pupils must accept), the unannounced visit is important. A real supervisor, unless he believes it necessary, would not think of making surprise visits merely to catch teachers up to something or other. Until supervision has become much more professionalized than it is at present, the on-call form of visit will not gain the popularity it deserves.

4. *Supervision is a cure-all for educational ills.*—Partly because of the overenthusiasm of writers, the student often develops the notion that supervision is more important than administration. There must be administration before there can be supervision. A school must be organized and ordered; otherwise there would be chaos. It is fairly easy to find schools having good administration and little or no supervision, but a school without administration would be no school at all. Just how important supervision is will not be known until it is used to its greatest extent.

Closely related to the foregoing notion is the idea that supervision is a cure-all for the many difficulties of teaching. Any new movement or emphasis in education suffers from the exaggerated claims of its advocates, both in degree and in scope. When cooled evaluation is applied, the actual gains are almost sure to be disappointingly small in relation to the original expectations. Naturally, a reaction sets in, and such is a present danger in supervision, as is indicated by the following statement from a principal.

> Too much standardization and too much specialization is bad in any school. Too much supervision stifles teacher initiative and destroys morale among teachers. A good method for one teacher might prove a perfect "flop" with another. Let teachers use the method they can use best for maximum achievements.
>
> I am of the opinion that it is easy to overdo the supervising. I am of the opinion that there is more than one way to get results. It is easy to stifle enterprise and kill initiative by supervising. Most supervisors wish things done in *their* way.

Supervision is somewhat beset with attempts to find new or novel ways of improving teachers in service. Principals hesitate to write of their programs for fear they are too commonplace. As a result, educational literature contains few detailed descriptions of good, proved, common-sense practices. The remarkable growth of high-school supervision in recent years has come more through the spreading of interest and determination in the application of well-known supervisory methods than through the discovery of new or revolutionary techniques.

5. *The supervisor must be a master of subject content.*—A reason often given by the high-school principal-supervisor for his failure to supervise is that the teacher is much more expert in his particular

field of subject matter. The principal feels himself incompetent to judge or criticize the teacher's work and considers such an attempt arrogant. "If she has gumption, all the half-baked criticism of a principal who doesn't know what the teacher is teaching, for example, Spanish, won't help her." One should expect a supervisor to have "gumption," too; "half-baked" criticism by an ignorant principal would surely be worse than none.

An analysis of this situation discloses that the "reason" is actually an excuse. Expertness in subject content is but one supervisory qualification. Of course, it is very important and tends to become more so as supervision develops. Even a reasonable use of the other general devices will consume more time than any principal can at present afford to give. In a school which has good supervision, the principal expresses this idea as follows:

> Our philosophy is that the principal's main business is to improve the learning activities. We formerly spent considerable time in class visitation; of late years we have given more attention to other phases of supervision, and we believe with better results.

The excuse of inexpertness is also used to side-step the supervision of experienced teachers. A rather typical statement is:

> It would be presumptuous of any principal to try to give "pointers" to teachers who have been many years in his service. My more experienced teachers are experts, qualified to be heads of departments or supervisors. As a matter of fact, quite a number of them have been heads of departments before coming to me.

If the principles of modern supervision are sane, there is no valid reason why experienced teachers should not profit from supervision, but, if they cannot, the supervisor may at least learn much from them.

6. *Supervision is naturally unpleasant.*—Too often the student is led to believe that supervision is necessarily disagreeable. Such an attitude is harmful chiefly because it tends to dampen supervisory enthusiasm—that enthusiasm which is at present much needed. The idea that supervision is inherently unpleasant may be attributed largely to the older forms of supervisory inspection—rating, failing teachers, discipline, and fault-finding in general. Any field of endeavor has its unpleasant aspects, but a true profession gives to them only the minor emphasis which they deserve in relation to the total

situation. To think of supervision as unpleasant is no more fair than to think of teaching or administration as being the same.

The foregoing examples of softness in supervision may seem somewhat exaggerated. They reflect, however, the attitudes brought into university classes by students of supervision. It may be that the first view of a new field naturally tends to be colored by the fringes. What students need most is to be given a picture of modern supervision in its true light—a rational, professional field of educational endeavor having strength of character and saneness of content, in which good judgment and intelligence have a large place. Closely related to this attitude is the need for a clear recognition of the fact that teachers are becoming a mature, educated, cultured group and are learning rapidly to resent softness in supervision.

SEX DIFFERENCES IN ACHIEVEMENT IN HIGH-SCHOOL GEOMETRY

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EARLIER INVESTIGATIONS

Studies of sex differences in achievement in high-school geometry have been made by several investigators. With a single exception, in a study of doubtful validity, the results point to significant differences in favor of boys. However, most of the studies suffer from several deficiencies, particularly from differential selection and from failure to equate the groups compared with respect to variables that may have been responsible for the results obtained.

One of the earlier studies was made by Touton (**6, 7**),[1] who compared the preferences and the achievements of boys and girls in the exercises of the geometry examination conducted by the New York State Department of Education in 1918. Touton's analysis of his data led to the conclusion that boys excel girls in achievement in plane geometry. Since the data that Touton employed were highly selected and an unknown number of papers in geometry were not submitted to the examiners, it is impossible to judge whether the differences that he observed were due to selection or to valid differences in proficiency. Webb's study (**8**) revealed substantial differences in achievement when intelligence was held constant. The differences were uniformly in favor of the boys except among the pupils who had the highest intelligence-test scores. The percentages of overlapping on the two forms of the Webb test were 59 and 65. Webb found, as did Touton, that the variability of the girls' scores was greater than that of the boys' scores.

Perry's study (**5**) is the only investigation that failed to reveal higher achievement scores in geometry among the boys. Since

[1] The bold-face figures in parentheses refer to the bibliography at the end of this article.

Perry's study was confined to small groups and the conditions were arranged to evaluate methods of teaching rather than sex differences, the results are unimportant as far as the present problem is concerned. Cameron's investigation (2) suffers from two limitations: (1) The boys and girls were in different schools. (2) There is at least some possibility that differences in instruction were present. The tests were of a type that rendered objective scoring difficult.

THE PRESENT INVESTIGATION

The study here reported was conducted with practically the same procedure that Webb employed. The test used was the Webb

TABLE I

MEAN SCORES OF 486 BOYS AND 501 GIRLS ON THE FIVE PARTS OF THE WEBB GEOMETRY TEST

PART	MEAN SCORE		PERCENTAGE OF GIRLS REACHING OR EXCEEDING MEAN SCORE OF BOYS
	Boys	Girls	
1.....	11.5	9.0	30.7
2.....	4.7	4.3	41.3
3.....	2.6	2.2	38.1
4.....	2.5	1.8	30.9
5.....	9.0	5.5	29.5
Complete test.....	25.1	18.5	27.1

Geometry Test, Form A. All the pupils whose scores are considered were given the Terman Group Test of Mental Ability, Form A, within a week of the geometry test. The tests were administered during the school year 1933–34 in the Catholic high schools of an eastern city where a school survey was conducted. Complete information was obtained for 486 boys and 501 girls. The geometry scores of these two groups are shown in Table I.

As the two groups were not of equal intelligence, the comparisons in this table are not dependable. The exclusion of the small numbers of pupils at both extremes of the intelligence-score distributions yielded two groups of 436 boys and 437 girls whose average intelligence scores are practically identical. The scores of these two groups

of pupils on the five exercises of the geometry test are given in Table II. It will be observed that the difference in the intelligence of the two groups is statistically insignificant. The weighted total scores on the geometry test differ by 6.42 points. This difference is more than nine times the corresponding standard error. The differences

TABLE II

COMPARISON OF SCORES ON THE FIVE PARTS OF THE WEBB GEOMETRY TEST MADE BY A GROUP OF 436 BOYS AND A GROUP OF 437 GIRLS WITH COMPARABLE INTELLIGENCE

TEST	BOYS' SCORES			GIRLS' SCORES			COMPARISON		
	Mean	Standard Deviation	Standard Error of the Mean	Mean	Standard Deviation	Standard Error of the Mean	Difference in Mean Scores	Standard Error of the Difference	Difference Divided by Standard Error of the Difference
Intelligence.....	146.03	21.92	1.05	145.13	22.85	1.09	0.90	1.51	0.60
Geometry test:									
Part 1.....	12.46	6.64	.32	9.42	4.87	.23	3.04	.39	7.79
Part 2.....	4.33	1.57	.08	4.18	1.72	.08	.15	.11	1.36
Part 3.....	2.36	1.54	.07	1.90	1.30	.06	.46	.10	4.60
Part 4.....	2.03	1.05	.05	1.48	1.17	.06	.55	.07	7.86
Part 5.....	1.33	0.95	0.05	0.87	0.96	0.05	0.46	0.07	6.57
Complete geometry test.....	26.75	11.19	0.55	20.33	9.63	0.46	6.42	0.71	9.04

between the scores of the boys and the girls are statistically significant in all the comparisons except that of Part 2. On this test the boys' average is only slightly higher than that of the girls, but in the other four exercises the differences are large in relation to their standard errors. There is considerable overlapping in the forms of achievement demanded by the separate exercises of the Webb test. Part 2 consists of a small number of items, arranged in completion form, which require a knowledge of definitions of fundamental concepts. An example from the second section of the test is: "The ——— of a circle is πr^2." The two groups are apparently equal in their mastery of this type of subject matter.

The achievement scores were also tabulated for each five-point range of intelligence-test scores. The means and the standard deviations were computed in the usual way, and the difference was divided by the corresponding standard error to yield the critical ratio. The critical ratios for the subtests for each of the intelligence classifications are shown in Table III. If the conventional standard of a quotient of 3 is demanded for statistical significance, it will be found that only a few of the differences are reliable. Of a total of eighty-five comparisons, seventy-four differences are in favor of the boys while only eleven are in favor of the girls. Fourteen of the differences in favor of the boys are statistically significant, but none of the comparisons favoring the girls are statistically significant. Although only one-sixth of the differences are statistically reliable, the consist-

TABLE III

RELIABILITY OF DIFFERENCES BETWEEN SCORES MADE ON THE FIVE PARTS OF THE WEBB GEOMETRY TEST BY 436 BOYS AND 437 GIRLS GROUPED ACCORDING TO INTELLIGENCE-TEST SCORES

Intelligence-Test Score	Number of Subjects		Critical Ratio*				
	Boys	Girls	Part 1	Part 2	Part 3	Part 4	Part 5
190 and above...	14	10	1.85	0.03	1.73	0.51	0.82
185–89.....	12	6	.....	.....	.....	.....	.....
180–84.....	24	21	3.42	− .88	2.77	.48	3.36
175–79.....	27	28	1.87	.15	2.58	1.92	2.07
170–74.....	34	21	.97	−1.13	4.50	2.48	1.58
165–69.....	31	24	2.42	.90	5.03	4.04	1.57
160–64.....	36	39	3.15	.02	.43	2.44	1.32
155–59.....	38	33	1.16	−1.62	1.41	.37	3.87
150–54.....	27	28	2.12	− .85	.99	1.14	2.30
145–49.....	38	35	4.60	.28	.50	3.68	1.86
140–44.....	38	31	3.10	1.38	1.27	1.48	1.43
135–39.....	15	29	− .38	.70	.90	2.40	2.06
130–34.....	27	27	.24	.17	.00	.60	.27
125–29.....	19	21	.77	− .15	.15	1.04	1.56
120–24.....	15	20	− .22	4.68	.84	3.07	3.06
115–19.....	12	17	1.55	.99	2.04	3.72	− .97
110–14.....	15	24	.22	−2.16	.14	− .47	.32
105–9.....	14	23	1.20	.53	.97	0.32	1.16
Total.....	436	437	7.79	1.36	4.60	7.86	6.57

* Critical ratios prefaced with a minus sign indicate that the girls' mean was higher than that of the boys.

ency of the results is noteworthy. Only on Part 2 of the test does the achievement of the girls approach that of the boys.

Webb observed that the girls with the highest intelligence-test scores had higher achievement scores in geometry than the boys of equal ability. The data in this article, however, indicate that at all levels of intelligence the achievement of the boys is considerably greater than that of the girls.

The coefficients of variability for the scores on the whole test are 41.8 for the boys and 47.4 for the girls. This result agrees with the ob-

TABLE IV

COMPARATIVE VARIABILITY OF SCORES MADE ON THE FIVE PARTS OF THE WEBB GEOMETRY TEST BY 436 BOYS AND 437 GIRLS

PART	BOYS' SCORES			GIRLS' SCORES		
	Mean	Standard Deviation	Coefficient of Variability	Mean	Standard Deviation	Coefficient of Variability
1	12.46	6.64	53.3	9.42	4.87	51.7
2	4.33	1.57	36.3	4.18	1.72	41.1
3	2.36	1.54	65.3	1.90	1.30	68.4
4	2.03	1.05	51.7	1.48	1.17	79.1
5	1.33	0.95	15.0*	0.87	0.96	16.4*
Complete test	26.75	11.19	41.8	20.33	9.63	47.4

* Weighted mean used.

servations of Touton and Webb, who noted that the girls were relatively more variable than the boys in geometry achievement. The measures of absolute and relative variability for the two groups on the separate exercises are given in Table IV. In general, the relative variability is greater among the girls than among the boys. Most of the differences, however, are small, and in one instance, Part 1, the boys' scores are more variable than the girls' scores. On the whole, there is some confirmation for the belief that there is greater relative variability in achievement in geometry among girls, but this variability is considerably less important than the differences in almost all the averages.

Webb called attention to the fact that the difference between boys and girls in geometry corresponded to the approximate equivalent of one year of mental age. The present data indicate that this state-

ment is no exaggeration, for there is a difference of approximately thirty points in intelligence scores for boys and girls of equal achievement in geometry.

The causes of the striking difference are not revealed by the data of this investigation. Since the pupils were, for the most part, in coeducational classes, differences in teaching efficiency cannot be wholly responsible. Intelligence has been eliminated by equating the two groups. Interest is probably a factor of some consequence, since the requirement of geometry is definitely linked with such college courses as those in engineering. Whatever the cause of the difference, the difference itself is much greater than has been reported in achievement in other high-school subjects.

CONCLUSIONS

1. Boys excel girls in achievement in plane geometry in all the phases of the subject included in the Webb Geometry Test with the exception of knowledge of fundamental definitions, in which the two groups are probably equal.

2. The sex differences extend throughout all levels of intelligence.

3. On the whole, relative variability is greater for the scores of the girls than for those of the boys.

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DUPLICATION OF EFFORT BETWEEN HIGH SCHOOL AND COLLEGE

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THE PROBLEM AND PREVIOUS METHODS OF ATTACK

Duplication of course content between high school and college constitutes a problem which administrative officers in institutions of secondary and higher education in this country have accepted somewhat apathetically. Even during the last decade, which saw the efforts of Koos in this field, little has been done to eliminate the undoubted overlapping between high-school and college work.

Under a grant from the General Education Board, the University of Buffalo and the high schools in Buffalo are engaged in a study which has as its aim improved articulation between high school and college, particularly in the case of the superior student. As one phase of this study,[1] which is restricted to the local situation, the problem of duplication of course content at the two levels was subjected to careful investigation.

When this problem was first recognized and studied, the approach usually lay through the use of textbook analysis. That is, the assigned textbooks in the high school and the college courses which might overlap, such as chemistry or economics, were compared to see what topics were common to the two books and the number of words or lines devoted to these topics. The use of this technique enabled Koos to maintain that, "although there are some differences between high-school and first college courses in chemistry, the courses are in reality much alike . . . . if a student takes the course in general inorganic chemistry in college after having had the high-school course—as students often do—he is repeating almost all of it."[2] Much the same situation was found by Koos to hold in the

[1] See Edward S. Jones (Editor), *Studies in the Articulation of High School and College.* University of Buffalo Studies, Vol. IX. Buffalo, New York: University of Buffalo, 1934.

[2] Leonard V. Koos, "Overlapping in High School and College," *Journal of Educational Research,* XI (May, 1925), 330.

case of economics, English literature, English composition, and American history, indicating the extent to which high schools and colleges had failed to co-ordinate their work.

However, there are certain objections to the use of this method—a method which has been too commonly employed. While of value as an exploratory device, such a technique fails to take into account the content of the material devoted to any particular topic. An author writing for a college group may easily include more significant material in his discussion than another writer who has in mind a group of high-school pupils. The treatment in the one instance may be analytic and theoretical, while in the other it may be descriptive and filled with illustrative material. While, therefore, the pupil who studies a given topic in the high school and then takes it up again in college is unquestionably retracing his steps, the duplication may not be so pronounced as the figures supplied by textbook analysis would indicate. Moreover, the nature of the class discussions and the point of view of the instructors in the two institutions may also differ widely. The instructor in his lectures may supplement the textbook material, he may use collateral readings, and he may introduce problems in such a manner as to alter materially the content of the course as it appears in the textbook chosen. This variation would be particularly characteristic of the college field in which the instructor feels less tied down to one book than does his high-school fellow. In other words, differences in the material of the textbook may be further accentuated by differences in the degree to which the high-school and the college instructors supplement the textbook. This statement is not to deny that there is overlapping in subject matter between the high school and the college; it merely serves to indicate that textbook analysis is not an entirely satisfactory technique for measuring the nature and the amount of that overlapping. A different approach to the problem seems essential if there is to be any valid solution.

Analysis of the factors involved would suggest that a technique which takes into account the skills, the information, and the attitudes which a pupil acquires by reason of membership in a given course will yield the most meaningful results. If these prove to be the same as those developed in the college course, then there must

be overlapping between the two courses. The problem therefore becomes: What residuum of skills, knowledge, and attitudes is common to any particular subject in high school and college? How much does the high-school pupil already know when he enters a given course in college? Measurement of the outcomes of instruction at the two levels should prove of help in determining the actual duplication of effort on the part of these two units in our educational system: the results, not the presumed content, of the courses in the two institutions are the significant factors.

METHODS OF INVESTIGATION IN THE PRESENT STUDY

This point of view has dominated the attack on the problem of overlapping at the University of Buffalo. As in the study by Hunt,[1] there are two approaches, the indirect and the direct. In the indirect approach the outcomes of the high-school course are evaluated by comparing the marks of college students in chemistry, economics, and physics who had taken high-school courses in these fields with the marks of students who were studying these subjects for the first time, the comparison being restricted to students who possessed the same levels of general scholastic aptitude. While such an approach is subject to certain limitations, notably the unreliability of essay examinations and the fact that marks fail to reveal the effort put forth by the student, such a comparison helps to indicate whether there is any overlapping in subject matter between the two institutions.

The direct approach consists in measuring the attainment of high-school pupils in terms of the objectives and the outcomes of college courses. If the skills and the knowledge which the high-school pupil acquires are sufficient to enable him to meet the standards of the college in any particular field, as evidenced by the examination given, then there is undoubtedly overlapping in the work of the two institutions in that particular field. In the use of such a method, nothing is called into question except the outcomes of the high-school course when evaluated in terms of the measuring instrument used by the college. There is no question of the use of similar textbooks, of over-

[1] Thelma Hunt, "Overlapping in High School and College Again," *Journal of Educational Research*, XIII (March, 1926), 197–207.

lapping in textbook content, of similar or dissimilar methods of instruction, of aims and objectives, or of the nature of the work. The skills and the knowledge which the high-school pupil carries away with him as the result of his course are the only factors of any importance. If they enable him to write as good an examination as that written by college students, then, for that pupil, there is definite overlapping between the work done in high school and college. If there are enough such high-school pupils, then the two courses must be suspect.

This technique, like the indirect method, is subject to the limitations which follow from the use of the essay examination. In actual administration, moreover, it was found almost impossible to measure the effect of the high-school course alone because of the fact that the pupils invariably made some special preparation for the examination. Even with these limitations, however, it was felt that this approach to the problem of duplication held distinct possibilities.

RESULTS OF THE DIRECT METHOD

The direct method of measuring overlapping was inaugurated at the University of Buffalo in June, 1932. After a thorough explanation of the procedure, high-school Seniors of outstanding ability were invited, early in June, to write the regular final examinations given by the University to cover the first semester of elementary economics, elementary chemistry, and elementary physics, and the second semester of the basic course in American history (normally taken in the Sophomore year). A number of high-school pupils were interested in the plan outlined, since passing any of the examinations meant receiving college credit for the course. Unfortunately, it was found impossible to secure the co-operation of the pupils without promising that they would be given the opportunity to familiarize themselves with the nature of the work done in college. The brief time available for special study, however, renders it unlikely that the results secured by the use of this method are completely invalidated.

The examinations which these high-school pupils wrote were those written by the regular classes in the several subjects in college. They were given at the University and were proctored in the usual way by

members of the faculty, and the papers were marked by members of the departments involved. The standards set up by the departments for their own students were rigorously observed in the marking of these papers.

In each of the four fields the achievement of these pupils on the examinations affords ample evidence of overlapping between high school and college. Nine pupils who had studied the subject for a year in high school wrote the examination in physics. The average mark of this group was 37, which compared favorably with the average of 56 secured by the regular class. Obviously, therefore, much of the knowledge and the ability in this field which the department expects students to acquire through the work of the first semester has been mastered by these high-school pupils. Much the same situation is found in chemistry. Fifteen pupils who had studied the subject for a year in high school wrote the examination, and, while no one passed, the average mark of 32 indicates the extent to which the college course duplicates the work done in high school. The sciences are not alone, however, in thus repeating high-school work. Eight students tried the final examination in American history, and seven secured more than the passing mark of 60. In economics,[1] which proved most popular of all the examinations offered, the average mark of the thirty-four pupils participating was 26, with individual marks ranging up to 47 (the passing mark in this instance was 50). It is evident, therefore, that in these subjects duplication also exists to a significant degree.

On the whole, then, it seems fair to maintain that, to the extent to which the examinations used are suitable measuring devices, there is definite overlapping in the outcomes of the work done in these several courses as given in the high school and the college. Granted that this overlapping is shown only for superior students, it is likewise true that the work itself must overlap, since some high-school pupils are able to do as well on the college examinations as these results indicate.

[1] This group contained, at the request of the teacher, all the members of one high-school class in this subject. It does not, therefore, represent only pupils who were judged to have a mastery of the course.

RESULTS OF THE INDIRECT METHOD

While the results described are valid only for superior students, the indirect method, since pupils of all ability levels are involved, has the virtue that its results are more widely applicable. Use of this method, of course, is restricted to those subjects in which the enrolment in the elementary courses in college may be divided into two groups of students, those who have and those who have not studied the subject in high school.

Analysis on this basis of the marks awarded in chemistry and in physics over a two-year period demonstrates once more that the work done in these subjects in high school makes a very definite contribution to the success of the student in the corresponding courses in college. In each case the average mark at the end of the first semester made by students who took the subject in high school was higher, to a statistically reliable extent,[1] than the average mark secured by those students who were taking the subject for the first time. It would seem obvious, then, that there must be considerable duplication of effort in these fields on the part of the high school and the college.

To determine whether any factor other than the high-school course in chemistry or physics was causing this difference in average marks in the college course, detailed analyses were made of the two groups taking each subject. In the case of both physics and chemistry, for example, it was found that there was no difference between the two groups with respect to the average Regents' grade,[2] high-school rank, percentile ranking on the Psychological Examination of the American Council on Education, quantity and quality of preparation in the field of mathematics, or in the average mark for the first semester in college *excluding physics* (or *chemistry*). The two groups in each case were evidently similar from the point of view of high-school preparation and general scholastic ability, and the difference between their marks in the college course must, therefore,

[1] In the case of the first-semester course in physics, the difference between the means of the two groups was 3.20 times its standard error; in the first-semester course in chemistry, the corresponding figure was 5.06.

[2] Other research carried on in connection with the larger study of which this is a part demonstrates that for the University of Buffalo the Regents' average is the most useful single index available for prediction. See Edward S. Jones (Editor), *op. cit.*

be considered a function of the work in the subject done in high school.

In economics, the only other subject field in which this method was used, analysis of the marks secured by the two groups did not yield such a clear-cut conclusion. While there was a tendency for college students who took the subject in high school to earn the higher average mark in the subject, in neither the first nor the second semester did the difference approach statistical reliability.[1] In this particular field, therefore, there would seem to be little overlapping between the work done in high school and college.[2]

On the whole, while the use of the indirect method in this study was restricted to but three fields and did not reveal the nature of the overlapping in those instances where overlapping was found, the method is of value in suggesting subjects which would repay further study.

ACHIEVEMENT OF STUDENTS ADMITTED TO ADVANCED COLLEGE COURSES

In the light of the results of these investigations, the University of Buffalo is attempting to meet the problem presented by making available to superior high-school Seniors the opportunity to anticipate the work done in certain of the elementary courses offered in college. Evidently, such pupils in some of their high-school courses cover part of the work taken up in college. It would seem the part of wisdom, then, to help these pupils master those sections of the college subjects which are not taken up in high school, to examine the pupils to see that this work has been done satisfactorily, and, if so, to give them credit for the course and permit them to go on to more advanced work.

This plan the University of Buffalo is following. Extensive outlines, covering the work done in the different subjects in which overlapping is present, have been prepared and placed in the hands of

[1] For the first semester in economics the difference was 1.43 times its standard error; for the second semester the difference was so slight that no reliability was calculated.

[2] It should be noted that a number of other approaches to this problem (described in Edward S. Jones [Editor], *op. cit.*) suggest that in this case the indirect method did not reveal the true situation and that there is very definite overlapping between the high-school and the college courses.

those pupils who, in the judgment of their high-school teachers, are capable of guided, independent study and are likely to profit by such a procedure. Members of the staff of this study interview these pupils, suggest possible methods of work, and in some cases, where there are enough pupils interested in the same subject in any one school, set up seminars which meet twice a month to discuss problems and outline further work. In some schools interested teachers help their abler pupils to fill in the gaps in their preparation; in others the pupils work independently and with no other help than that afforded by the syllabus and the illustrative examination questions which it contains. To measure the achievement of these pupils, special examinations, which are wider in scope, but not more difficult, than those used in the regular course, are prepared by the several college departments. The pupil who is successful in one of these examinations is granted credit for the college course covered and is free either to go on to more advanced work in the department or to put the time thus saved on some other course.

This procedure was inaugurated during the second semester of the school year 1932–33. Analysis of the results of the examinations given in June, 1933,[1] definitely indicates that some high-school pupils are capable of completing work of the same extent and the same difficulty as that expected of college Freshmen. Moreover, students who entered college in September, 1933, with credit earned in this way have invariably done well in their college work, particularly in those courses to which the work credited through these special examinations is prerequisite. As far as can be ascertained through interviews and analysis of examination marks, these pupils have not suffered in any way by thus anticipating college work. Apparently, the saving of time and effort and the stimulation afforded by unfamiliar work contribute to this situation and make for the continued usefulness of such a procedure.

[1] For a complete discussion of the results of the first special examinations, see Henry C. Mills, "Anticipating College Credit," *School and Society*, XXXVIII (October 28, 1933), 557–80.

ESSENTIALS OF A PROGRAM OF EXTRA-CURRICULUM ACTIVITIES

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No doubt there are still many high schools in which no plans are made for extra-curriculum activities, and in many other schools these activities have secured recognition but are merely being tolerated. On the whole, however, extra-curriculum activities have become accepted as a proper and desirable part of the educational scheme, not only in the secondary school, but also in the college and even in the elementary school. Their definite nature, function, and value are, however, still matters of dispute.

Within recent months the writer has reviewed 112 references in the extra-curriculum field, nine textbooks and several summaries being included. On the basis of this reading he has formulated the following ten characteristics which may be said to be essential to an effective extra-curriculum program. Only brief comment is added to the statement of each characteristic.

1. The faculty must understand adolescents, be sympathetic toward them, and enjoy working with them and participating in their activities. Without this attitude and co-operation on the part of the faculty, the program can hardly succeed. Many writers emphasize this attitude as the starting point in organization.

2. There should be a central controlling body which authorizes new organizations, disbands any that may have become useless, determines objectives for the program, and unifies the activities. This controlling body consists of faculty and pupil members, with a majority of pupils. Such control prevents undesirable ventures and gives dignity and unity to the undertaking as a whole.

3. The entire program and each of its units should be characterized by pupil initiative, pupil participation, pupil management, and pupil evaluation of progress and outcomes. Extra-curriculum ac-

tivities are the pupils' contribution to school life. Only pupil management will bring about development of desirable character traits.

4. The principal or his representative should have a veto on all pupil activities, undertakings, or decisions, but seldom should he find it necessary to exercise this veto. The very nature of the school organization requires that the principal have the power of veto, and pupils must understand that this power is necessary and why. To proceed along other lines courts disaster.

5. The function of the sponsor should be guidance—sympathetic, intelligent, inspiring, but firm when necessary. When this principle is considered in connection with Items 1 and 3, further comment is not necessary.

6. Within necessary limitations there should be an organization of interest open to every pupil, and every pupil should participate actively in one or more organizations. Of necessity the number and the variety of units that can be organized will be limited, but it is desirable that every pupil find an organization in which he is interested. Clubs should not be exclusive. As a good citizen, each pupil will interest himself in at least one club. Many schools have schemes for limiting participation.

7. The whole program of extra-curriculum activities and all its units must have worthy and constructive objectives, and definite and constant effort must be made to attain the objectives. Each organization should seek to promote the entire school program as well as its own. Extra-curriculum activities are not a thing apart but are definitely related to the school's function as a whole.

8. The school should provide time and place in its daily schedule for all meetings of pupil organizations. Thus, the administration and the school dignify the pupils' program. The plan also has the advantage of enabling the school to exercise necessary controls.

9. All activities, especially those in which money is handled, must be carefully supervised by the school to the end that all shall serve their proper purpose. Particular mention is made of finances because improper practices in handling money have been common. As a matter of proper and practical educational experience, a good accounting system should be installed and operated.

10. Each pupil's record in extra-curriculum activities should be filed in the office with his official record. Information on the pupil's extra-curriculum activities is a valuable basis for guidance. (This item is usually mentioned only in the more recent writings.)

The organizations which writers on the subject of extra-curriculum activities regard as most valuable include some form of pupil participation in school government, home rooms, the school assembly, publications, athletics, and clubs of various kinds.

No claim is made that this list of desirable characteristics is complete. The development of an efficient program of extra-curriculum activities requires several years. The values mentioned by writers and the objectives set up by administrators are not always attained. Few, if any, of the claims have been scientifically proved, and the actual worth of extra-curriculum activities is largely a matter of judgment. However, when large numbers of teachers and pupils who have had experience with extra-curriculum activities in their school programs insist that the extra-curriculum has virtue, it seems sensible to accept at least some of their views.

TYPEWRITING AS A FACTOR IN COLLEGE SUCCESS

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Today a great many educators are urging universal typewriting training at the secondary-school level. Various arguments are advanced, among them the fact that typewriting, especially since the advent of reliable but inexpensive portable machines, is replacing longhand in personal as well as in business use. In addition to the eight hundred thousand and more persons who were shown by the 1930 Census to be employed as typists and stenographers, there are also an uncounted number of incidental users of typewriting: newswriters, authors, small business men, the professional group, and students. Especially are high-school pupils who are preparing for college being urged to acquire typewriting skill as a tool. As Reddick[1] has pointed out, it is becoming necessary for the college student to typewrite term papers and similar material. Although many universities still accept theses written in longhand provided the handwriting meets certain requirements, such theses are certainly the exception rather than the rule. Students generally believe that one of the simplest ways of securing better marks is to turn in all written work in typewritten form.

A few questions suggest themselves at this point: Does typewritten work command higher marks because the neater appearance and the ease of reading favorably impress the scorer or because the work possesses real merit? If the latter is the case, do good students use typewriting or does the use of typewriting improve scholarship? If the use of the typewriter improves scholarship, how is the improvement brought about? Other similar questions may occur. If typewritten papers receive higher marks simply because of the improved appearance, the universal use of typewriting will eliminate the ap-

[1] Lawrence D. Reddick, "The Last of Longhand," *School and Society*, XXXVIII (November 25, 1933), 708–9.

parent advantage to the student typist. If, however, the use of typewriting actually improves the quality of the work done, then universal use of typewriting will result in universal improvement in scholarship.

As a part of a study of factors affecting the acquisition of typewriting skill, made possible at the University of Washington by a grant from the Carnegie Corporation of New York through the Carnegie Foundation for the Advancement of Teaching, the effect of the use of typewriting on marks and on scholarship was investigated. A "mark" was defined as the mark assigned to a particular paper or a particular course. "Scholarship" was defined as a combination of the type and the level of work done, inadequately but probably most conveniently indicated by the average of the marks received by a student over a definite period.

First, a set of longhand papers was selected and bona fide typewritten duplicates were prepared, so that a longhand and a typewritten copy of each paper was available. The typewritten and the longhand papers were then combined in various arrangements assuring that each paper would be marked in both forms, and these combinations were scored by different persons. The average of all marks given to the typewritten form of a paper was compared with the average of all marks given to the longhand form of the same paper. In a preliminary experiment this procedure was tried out with an advanced class in psychology and later with a group of eight instructors in the English department. In each case precautions were taken to keep the scorers ignorant of the nature of the experiment. In the preliminary experiment, in which each of thirty-two papers was scored eight times, a very slight and statistically insignificant difference was observed. In the second experiment, in which each of thirty-three papers was scored eight times, an average difference of one-tenth of a point (when A = 4, B = 3, C = 2, D = 1, and E = 0) was found favoring the typewritten form. When this difference was compared with its standard deviation, it appeared that the chances are approximately seven to one that a difference will always appear in favor of the typewritten form.

Next, the effect of the use of typewriting on scholarship was examined. It is possible that the use of the typewriter and higher

scholarship might in general be found together without a causal relationship. For example, extreme interest in a course might be responsible for both, or the more intelligent students might be more likely to realize the importance of the appearance of the written work than were the average students. Consequently, some means of ruling out this possibility was necessary. The method used was to compute the most probable scholarship of a number of students on the basis of their high-school performance and scores on a college-aptitude test, the latter including reading and vocabulary tests in addition to tests of general intelligence.[1] The divergence of the actual performance of each student from his prognosticated performance was determined, and the amount and the direction of the divergence was correlated with his use of typewriting. Each of 248 Freshmen and Sophomores indicated, on a five-point scale ("none," "very little," "about half," "nearly all," "all"), the extent of his use of typewriting on papers and on reading and lecture notes separately. A statistically significant difference was found between the divergences of actual from prophesied scholarship for those students who used typewriting on all papers and for those who did not use typewriting at all. This difference favored the group using typewriting. Those using typewriting on part of their work ranged between the extremes. A similar but smaller effect was found for the use of typewriting on lecture and reading notes. The average difference in the divergence of observed from forecasted scholarship for those who used typewriting on all assigned papers and those who did not use it at all was found to be five-tenths of a grade point.

In an attempt to determine how this advantage was produced, the students were asked to check one of the following as the method used by them. "(1) Write papers in longhand and then transcribe on the typewriter. (2) Write papers in longhand and then hire the work transcribed. (3) Make a longhand outline and then typewrite directly. (4) Do all work directly on the machine." They were also asked to state what advantages they enjoyed as a result of their use of typewriting. The last method, direct machine composition, showed a statistically significant superiority over the two transcrip-

[1] Glenn Myers Blair, "The Prediction of Freshman Success in the University of Washington." Unpublished Master's thesis, University of Washington, 1931.

tion methods. It appeared to be slightly better for the student to do his own transcribing than to hire it done, possibly because of the opportunity for correcting errors and for revising sections of the work. The third method, making a handwritten outline and doing all subsequent work on the machine, was found to be superior to writing the entire paper in longhand and then transcribing but was inferior to direct composition on the typewriter.

Of the 203 students using typewriting, 66 mentioned one advantage of the practice; 96, two advantages; 39, three advantages; and

TABLE I

ADVANTAGES OF USING TYPEWRITING IN COLLEGE WORK REPORTED BY 203 STUDENTS

Advantage	Frequency of Mention	Advantage	Frequency of Mention
Neatness, better appearance, etc.	125	Ability to keep up with thoughts, aid to thinking and expression	13
Ease of reading, legibility	83	Unity and organization of topic	6
Saving of time	76	Better work	5
Higher marks	26	No advantage	5
Aid in reviewing	23	Self-satisfaction	4
Easier to see errors	14	Required in some classes	3

2, four advantages—a total of 383 advantages reported. These responses, grouped under twelve headings, are shown in Table I, together with the frequency of mention for each group. These advantages may perhaps all be included in the following statement: The use of typewriting saves the student's time; it makes self-criticism, correction, and revision easier; it provides the aesthetic values of neatness and improved general appearance; and it secures those advantages resulting from the fact that typewriting is a better tool for the expression of thought than is handwriting. That the use of typewriting saves time is obvious when average typewriting and longhand speeds are compared. Almost as obvious is the fact that the detection of errors is easier with the typewritten than with the longhand form: a clause, a sentence, or a paragraph may more easily be seen as a unit; punctuation stands out; etc. The better appearance of typewritten work adds satisfaction which is in turn conducive to

better performance. The neat appearance may also have some slight favorable effect on the mark received, and it will certainly be welcomed by the person marking the paper. The superiority of typewriting as a working tool may be attributed, in part, to its greater speed and consequent cutting-down of the gap between the acquisition of an idea and its expression in written form and, in part, to the increased ease of criticism and improvement already mentioned.

Within the limits of this experiment, the following conclusions seem justified. (1) The average typewritten paper will receive a mark approximately one-tenth of a grade point higher than would the same paper in average longhand because of the effect of typewriting on the scorer. (2) The use of typewriting is responsible for an improvement of five-tenths of a grade point in actual over forecasted scholarship. (3) The student who does his written work on the typewriter thus enjoys an advantage which cannot be ascribed to the effect of a typewritten paper on the person scoring the papers. The advantages observed seem to be due to the facts (1) that typewriting saves the student's time, (2) that rapid self-criticism and correction are made possible, (3) that typewritten work is aesthetically superior to longhand work, and (4) that typewriting is a more fluent and efficient tool for the expression of thought than is handwriting.

Apparently, typewriting skill is a desirable and useful tool for every college student, and instruction in typewriting should have a place in the college-preparatory curriculum of the secondary school. When this use of typewriting is added to the personal and vocational uses of this skill, it becomes evident that at least the majority, if not all, of our high-school pupils would profit by its acquisition.

SELECTED REFERENCES ON EDUCATIONAL PSYCHOLOGY

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An explanation should be made of the fact that some of the books and articles which belong in the field of educational psychology are not included in this summary. A number of studies of learning, mental growth, and individual differences in preschool children are included in the list of references on preschool education. Again, a number of studies in learning in the school subjects or the psychology of the school subjects are included in the lists of selected references on the school subjects. It was thought best to include these articles in the lists mentioned in order that the needs of persons interested in these subjects would be adequately met. Persons interested in educational psychology should also consult the list of selected references on preschool education and the lists concerned with instruction in the school subjects.

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A theoretical discussion of the problem, particularly as it relates to "progressive" methods.

332. COLE, LUELLA. *Psychology of the Elementary School Subjects*. New York: Farrar & Rinehart, Inc., 1934. Pp. xvi+330.

A description of the methods and problems of learning the elementary-school subjects, with emphasis on those features which are of practical concern to teachers and with specific suggestions for teaching.

333. FLETCHER, JOHN MADISON. *Psychology in Education*. New York: Doubleday, Doran & Co., Inc., 1934. Pp. xx+524.

A systematic presentation of a conception of human nature as a basis for education, developed with critical consideration of schools of psychology. Classifies psychological and educational processes under the two general heads of (1) acquisition, or learning, and (2) production, or creation.

334. FREEMAN, FRANK S. *Individual Differences:* The Nature and Causes of Variations in Intelligence and Special Abilities. New York: Henry Holt & Co., 1934. Pp. xii+356.

A summary and interpretation of the results of the measurement of individual differences by means of mental tests and a discussion of their educational significance.

335. GARRISON, KARL C. *The Psychology of Adolescence.* New York: Prentice-Hall, Inc., 1934. Pp. xxii+378.

An elementary presentation of the main facts regarding mental development during adolescence, based on recent scientific studies and emphasizing social development and personality.

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An account of the fundamental educational processes in terms of the functioning of the biological organism interpreted from the behavioristic point of view.

339. WYNDHAM, HAROLD S. "Contributions to the Problems of Instinct in Textbooks on Educational Psychology," *Pedagogical Seminary and Journal of Genetic Psychology*, XLV (September, 1934), 238–54.

A comparison of the treatment of instinct in the writings of general psychologists and of educational psychologists.

MENTAL GROWTH AND CHILD PSYCHOLOGY[1]

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Repetition of Piaget's study of the development of moral ideas to determine whether social environment affects it.

[1] See also Item 402 in the list of selected references appearing in the June, 1934, number of the *School Review*, Item 316 in the April, 1935, number of the *School Review*, and Items 132 and 161 in the April, 1935, number of the *Elementary School Journal*.

341. HARTMANN, GEORGE W., and TRICHE, ANDREW. "Differential Susceptibility of Children and Adults to Standard Illusions," *Pedagogical Seminary and Journal of Genetic Psychology*, XLII (June, 1933), 493–98.

In one-half the cases children are more susceptible to geometrical optical illusions than are adults, and in half the cases the adults are more susceptible.

342. HOLLINGWORTH, LETA S., and KAUNITZ, RUTH M. "The Centile Status of Gifted Children at Maturity," *Pedagogical Seminary and Journal of Genetic Psychology*, XLV (September, 1934), 106–20.

Retesting of 116 of 148 gifted children originally tested more than ten years earlier indicates substantial maintenance of superiority.

343. MORGAN, JOHN J. B. *Child Psychology*. New York: Farrar & Rinehart, Inc., 1934 (revised). Pp. xii+502.

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344. NIMKOFF, MEYER F. *The Child*. Philadelphia: J. B. Lippincott Co., 1934. Pp. x+304.

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347. STODDARD, GEORGE D., and WELLMAN, BETH L. *Child Psychology*. New York: Macmillan Co., 1934. Pp. xii+420.

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348. STRONG, EDWARD K., JR. "Permanence of Vocational Interests," *Journal of Educational Psychology*, XXV (May, 1934), 336–44.

An investigation of vocational interests based on a five-year follow-up study of college Seniors.

349. TEASDALE, H. "A Quantitative Study of Eidetic Imagery," *British Journal of Educational Psychology*, IV (February, 1934), 56–74.

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352. Long, Howard H. "The Intelligence of Colored Elementary Pupils in Washington, D.C.," *Journal of Negro Education*, III (April, 1934), 205–22.

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MENTAL MEASUREMENT AND RATING[1]

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[1] See also Items 407 and 413 in the list of selected references appearing in the June, 1934, number of the *School Review*.

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376. SCHULTZ, RICHARD S., and MACVAUGH, GILBERT S. "A Short Oral Group Intelligence Test," *School and Society*, XL (November 10, 1934), 639–40.

A revision of the Chapman Oral Intelligence Test.

377. SPEARMAN, C. "The Factor Theory and Its Troubles," *Journal of Educational Psychology*, XXV (April and May, 1934), 310–19, 383–91.

A continuation of the series mentioned in Item 387 in the list of selected references in the June, 1934, number of the *School Review*, which gives detailed consideration to the criticisms of the factor theory and a reply to the criticisms.

378. STEPHENSON, W. "An Introduction to So-called Motor Perseveration Tests," *British Journal of Educational Psychology*, IV (June, 1934), 186–208.

A description of four theories of perseveration and of motor tests designed to investigate the theories.

379. SYMONDS, PERCIVAL M. *Psychological Diagnosis in Social Adjustment*. Chicago: American Book Co., 1934. Pp. x+362.

A description of the methods used to diagnose criminal tendencies, mental disorders, vocational fitness, and citizenship and leadership by means of ratings, interviews, and tests, and a comprehensive classified list of tests of personality.

380. TOOPS, HERBERT A. "Tests and Techniques in a State-wide Minimal Guidance Program," *Occupations*, XII (April, 1934), 19–28.

Prefaces the description of the program with a discussion of the bearing of recent social trends on guidance.

381. TRYON, ROBERT C. " 'The Factor Theory and Its Troubles': Misrepresentation of a Criticism of the Theory," *Journal of Educational Psychology*, XXV (March, 1934), 232–33.

Rebuttal of Spearman's reply (Item 377 in this list).

382. VOTAW, DAVID F. "Notes on Validation of Test Items by Comparison of Widely Spaced Groups," *Journal of Educational Psychology*, XXV (March, 1934), 185–91.

Validation on the basis of those who know the item rather than those who answer correctly.

383. WORCESTER, D. A. "On the Validity of Testing," *School Review*, XLII (September, 1934), 527–31.

Emphasizes the need of relating tests to the types of training given and to the types of uses to which the training is to be put.

384. ZUBIN, JOSEPH. "The Method of Internal Consistency for Selecting Test Items," *Journal of Educational Psychology*, XXV (May, 1934), 345–56.

A comparison of three methods of validating test items.

PERSONALITY AND ADJUSTMENT[1]

385. HICKS, FRANCES ROSS. *The Mental Health of Teachers*. Contributions to Education published under the direction of George Peabody College for Teachers, No. 123. Nashville, Tennessee: George Peabody College for Teachers, 1934. Pp. 36.

A study of questionnaire replies from six hundred teachers, giving principal attention to the factor of "nervousness."

386. SHERMAN, MANDEL. *Mental Hygiene and Education*. New York: Longmans, Green & Co., 1934. Pp. xii+296.

A book for teachers in which the author relates psychiatric interest to pedagogical attitude.

387. SYMONDS, PERCIVAL M. *Mental Hygiene of the School Child*. New York: Macmillan Co., 1934. Pp. xii+322.

A book for teachers dealing with the general principles which are basic to the development of good mental health.

388. VERNON, PHILIP E. "The Attitude of the Subject in Personality Testing," *Journal of Applied Psychology*, XVIII (April, 1934), 165–77.

Makes a plea for the indirect approach in personality testing.

[1] See also Item 442 in the list of selected references appearing in the September, 1934, number of the *School Review* and Item 135 in the April, 1935, number of the *Elementary School Journal*.

Educational Writings

REVIEWS AND BOOK NOTES

An application of psychology to teaching.—That the selection and organization of materials for introductory textbooks in educational psychology are still in the experimental stage is indicated by a comparison of such books which appear during any given year. While students and instructors are sometimes confused by the lack of a standardized body of introductory material, the subject of educational psychology, on the whole, has much more to gain than to lose by such experimentation. In a recent book by Leary[1] an attempt has been made to correlate and interpret the data and theories of modern psychology from the point of view of teaching.

Leary follows the eclectic method in the selection of materials for his book. He consciously attempts to avoid the extreme views of any of the schools of psychology, holding that all schools have something of value to offer to the teacher. He attempts to reconcile divergent points of view where reconciliation is possible and in all cases to give the teacher a clear and valid foundation of psychology as a basis for teaching and learning.

The first chapter consists in an attempt to formulate a working point of view for the teacher. The method of approach might be described as a combination of behaviorism, functionalism, and determinism, a plan which allows the author considerable latitude in selecting elements from these three schools of psychology for integration into a single point of view. In this chapter the author indulges to a considerable degree in philosophizing about problems of teaching, and toward the end of the chapter he discusses the question whether education is a science. The chapter will probably be of greater interest to the author's colleagues than to students using the book. For students this chapter might have been of greater value if it had been placed at the end of the book instead of the beginning.

Chapters ii, iii, and iv of the book deal with the structural basis of mental activity and with organic behavior. The treatment in this section of the book is orthodox and presents no striking characteristics. The value of such material for students will depend somewhat on whether the course is preceded by an elementary course in general psychology. Following his discussion of structure

[1] Daniel Bell Leary, *Educational Psychology:* An Application of Modern Psychology to Teaching. New York: Thomas Nelson & Sons, 1934. Pp. xiv+364. $2.50.

and behavior, the author plunges into the various aspects of learning, introducing the topic by a treatment of different levels of learning. In subsequent chapters various aspects of the problems of learning are considered. A rather detailed evaluation is given of the Gestalt contribution, the author concluding that the Gestalt school emphasizes, quite properly, integration and the treatment of whole situations but that this viewpoint is not a new contribution and that the implications of the theory were apparent long before these were emphasized by the Gestalt proponents in their own particular terminology. The author cites the modern method of teaching reading, with its emphasis on words and phrases in contrast with the earlier *a-b-c* method, as an illustration of good theory and practice which would accord with Gestalt principles but which was reached prior to, and altogether independently of, Gestalt consideration. The problem of transfer, or, as the author calls it, "discipline," is treated briefly and quite inadequately. Neither in his discussion nor in his bibliography does the author give adequate attention to the generalization of experience, particularly at the level of the higher thought-processes. In view of the central position of this problem in any psychological theory of education, the treatment of this topic is one of the least satisfactory portions of the book.

In the latter part of the book certain practical aspects of teaching are treated, such as subject matter and method, classroom management, personality and mental hygiene, and educational measurements. While the treatment of these topics suffers somewhat from brevity, teachers will find this portion of the book useful on the whole. The book closes with a chapter which attempts to summarize the material from the point of view of a philosophy of education.

A textbook in educational psychology should be evaluated, not only in terms of what it presents, but in terms of what it fails to present. The present book is conspicuous for several important omissions.

One of the most notable omissions is a practically complete absence of data relating to the psychology of school subjects. In view of the fact that a large body of material from primary investigations of the psychology of the various subjects is now available and that these materials are peculiarly the property of educational psychology, as contrasted with materials borrowed from general psychology, it seems hardly justifiable to omit them from an introductory course. The effort of educational psychologists to build up a body of content of their own, which will make necessary much less borrowing from the general topics of psychology, is perhaps better illustrated by this particular type of material than by any other. Neither in his discussion nor in his bibliography does the author show any awareness of this large and significant body of data.

A second omission which strikes the reviewer's attention is the lack of any considerable amount of primary data, presented either in the form of tables or graphs. Such materials have come to be so commonly accepted in introductory textbooks as essential to an adequate presentation of the scientific data in educational psychology that one is somewhat surprised to find a complete text-

book in which there are no tables whatsoever, except four brief tables in the next to the last chapter relating to certain formal aspects of educational measurements. The absence of primary data is another indication of the fact that the author's principal method of treatment is philosophical rather than scientific.

A third notable difference in the treatment of this book and that of other such textbooks is the absence of any exercises or problems at the ends of the chapters to be used as supplementary work for the students. The general tendency in the last decade has been to include more material of this sort rather than to leave it out altogether. Furthermore, the bibliographies which are given both at the ends of the chapters and at the end of the book consist for the most part of general references rather than references to primary investigation. In the opinion of the reviewer, students at the college level should be made familiar with some of the outstanding scientific studies on the major problems of educational psychology.

On the whole, the book is an orthodox although somewhat formal presentation of the traditional topics in educational psychology. It could scarcely be described as progressive or forward looking either in its selection of materials or in its method of treatment. It lacks many of those characteristics which are essential to a scientific treatment of the subject, and it is doubtful whether students will be stimulated by it to a vivid interest in the scientific studies which constitute the best literature in educational psychology at the present time.

G. T. BUSWELL

A compendium on diagnosing differences in ability.—In eighty-six compact pages a recent addition to the literature of educational diagnosis[1] raises many pertinent questions. In the first chapter, devoted to the general outline of the problem, the author defines "differential diagnosis" as the discovery of strengths and weaknesses in an individual and discusses various questions connected with this type of diagnosis. Chapters ii and iii are technical expositions of techniques, the former concerned with the efficiency of tests for diagnosis and the latter with the technique of differential diagnosis. The fourth and final chapter contains an excellent list of diagnostic tests, with valuable discussions, under such headings as English, reading, and so on.

The book is a meritorious publication. It will doubtless be read with profit by most specialists in diagnosis. The reviewer wishes that it might be read by many classroom teachers. Surely, any teacher might be expected to read eighty-six pages on such an important topic. Or might he? Thereby hangs an educational tale of a nature intriguing to the reviewer.

For more than a decade there has been developing an ever-growing hiatus between a relatively few teachers who have applied statistical treatment to test data, often with profoundly significant results, and the rest of the 880,000

[1] David Segel, *Differential Diagnosis of Ability in School Children.* Baltimore: Warwick & York, Inc., 1934. Pp. viii+86. $1.40.

teachers in the country. Segel's book represents (perhaps not consciously) an attempt at popularizing much of Kelley's work, "a consummation devoutly to be wished." It contains no single formula of particularly great complexity. The author has labored, not in vain, to make the statistical material in chapters ii and iii readable and applicable to the task in hand. There is no excess verbiage, no plethora of symbolism. And yet—I venture to say that the vast majority of teachers cannot read this little monograph understandingly without considerable preliminary study. Nor do I know of any evidence to show that any great amount of the enormous volume of material involving statistical treatment of test data is permeating the profession. We have assumed that this work would penetrate, but I am afraid the assumption is not justified. Somehow this gap should be filled, but the present requirements of teacher training are not going to fill it. The hypothesis is tenable, I think, that the validity of many inferences drawn from statistical treatment will not be adequately tested until more of the teaching profession are competent to evaluate them. The fault is not with the statisticians alone. Too many leading educators toss aside test data and statistical treatment, arrogating to themselves the right to criticize when, I fear, they are too ignorant of the issues involved to criticize constructively.

Segel's little book involves several doubtful assumptions. That the elementary-school curriculum or any evidence of achievement in it should serve as a basis of guidance for permanent occupational interests is questionable. The quotation from Kelley's book, *Interpretation of Educational Measurements* (p. 99), which implies that a backward child might "advance as far as possible in mathematics that he may direct his steps to as important a vocation involving it [mathematics] as is within his power" is not impressive. This statement "smells of the lamp." Anyone who has read *Middletown* by Robert S. and Helen M. Lynd or has followed occupational trends in industry must be amazed at the notion that dull children could find occupations involving mathematics, unless, of course, we use a very broad interpretation and think of onion-pickers counting the leaves to forget their backaches or of hod-carriers playing beanbag with their hods of brick. Nor does it follow that statistically reliable differences in test scores in elementary-school subjects represent anything more than differences in motivation in related fields utilizing the same general ability. On the other hand, the author's criticism of the present practice of centering on weaknesses rather than on strength is wholesome. This practice is more than a tendency; it is a serious defect. It is evident not only in the treatment of abilities of an individual but in the treatment of individuals in a group. Segel's discussion in chapter ii ought to be of value in subjecting the present abundance of so-called "diagnostic tests" to closer scrutiny. If the book serves to correct any of the present mistaken emphasis on weaknesses or to improve the character of diagnostic tests, it will have amply justified publication.

AUSTIN H. TURNEY

UNIVERSITY OF KANSAS

Guidance for the beginner and the advanced student.—Two books of interest to those working in the field of guidance have appeared, the one[1] a revision of a popular textbook for beginners in this field and the other[2] a summary of recent investigations of student-personnel work. In a sense, the two are complementary. The textbook, the content of which is somewhat elementary in character, stresses the secondary school. The summary, the content of which draws heavily on the published reports of investigative character, emphasizes the college aspect of this field.

The earlier book by Jones has been revised but not fundamentally altered. Its division into four parts remains, although there are now twenty-four chapters instead of twenty-two. In Part I, "The Meaning and Purpose of Guidance," one chapter which dealt with the aims and objectives of guidance has been eliminated. A new chapter entitled "Types of Problems Confronting Young People," drawing heavily on Ruth Strang's *The Rôle of the Teacher in Personnel Work*, has been added. The chapter on the meaning and purpose of guidance has been largely rewritten. Newer evidence is presented in the first chapter to justify the need of guidance. Part II, "Methods of Investigation in Guidance," remains much as it was in the earlier edition. The material in Part III, "Methods of Guiding Students," has been rearranged and enlarged. New material appears on both home-room and group guidance. Much greater attention is now given to "Leadership Guidance" and "Leisure-Time Guidance." Some discussion has been added to the organization of guidance in the large school system. A section has been inserted on "Guidance in Rural Areas." Reference is now made to the work of the National Occupational Conference. In Part IV, "The Results of Guidance," a section on "The Evaluation of Guidance" has been inserted. (A review of the first edition was critical of the omission of this topic.)

Although somewhat censorious of the concepts of guidance set forth by others, the author of this textbook may fail to satisfy many with regard to the soundness of his own concept. The following sentence, for instance, will add little to one's view on the relation of education and guidance: "It seems clear, then, that guidance is identical with the process of teaching when teaching is directed toward helping the child to learn; when the child learns without assistance, there is no guidance" (p. 44). The book will perhaps hold its place as a textbook because of a readable, lucid style. It contributes little, however, to clarifying the place of guidance in the public schools.

The function of Miss Strang's book is to summarize the results of investigations relating to student-personnel work in both the college and the secondary-school fields. The author has attempted to examine critically all published reports of investigations from the year 1919 to January 1, 1934. The useful meth-

[1] Arthur J. Jones, *Principles of Guidance*. New York: McGraw-Hill Book Co., Inc., 1934 (second edition). Pp. xxviii+456. $3.00.

[2] Ruth Strang, *Personal Development and Guidance in College and Secondary School*. New York: Harper & Bros., 1934. Pp. viii+342. $4.00.

ods and the pertinent conclusions from the articles have been extracted and are summarized in an integrated form. Finding it impossible to deal with all the material in one volume, the author has limited this book to the administrative aspects of student-personnel work and educational guidance. Apparently, it is Miss Strang's intention to publish three other volumes, one dealing with each of the following topics: individual counseling, control of the student's environment, and vocational guidance.

This book contains four chapters: the first, a brief introduction, and three parts, or chapters, dealing, respectively, with "Personnel Work in Education," "Selection and Orientation of Students," and "Educational Guidance." Much greater emphasis is given to the college than to the secondary school throughout all parts. There are 618 selected references in the Bibliography, classified into the three topics discussed in the book.

Miss Strang has been rather signally successful in doing the task she set for herself; namely, to write an "integrated creative summary made by a person who has an overview of the entire field and can see wherein the results of investigations supplement or contradict one another and what is the peculiar contribution each makes in method, facts, and principles to a particular area of knowledge" (pp. 2–3). It seems a bit unfortunate that the title does not suggest this aim, which is well achieved by the author. Persons interested in student-personnel problems will welcome this readable summary and interpretation of recent literature. It will be of particular help to guidance workers in junior and senior colleges.

S. A. HAMRIN

NORTHWESTERN UNIVERSITY

Ideas and ideals for a changing society.—A book[1] that in some measure combines essay and speech material for English classes with social-studies content is the result of the collaboration of two high-school teachers. This unusual volume is made up of a group of readings from frontier thinkers, so selected as to give pupils direct contact with ideas on such subjects as peace, international cooperation, economic security, individual rights, social planning, and recent innovations in government. Each selection is introduced by a brief biographical sketch giving the author's background and point of view. Questions and discussion topics on each selection are given in the Appendix, as well as a general list of readings. The illustrations are limited to a few unusually fine photographs.

The objectives of the book are apparent in its organization. The first article, a commencement address by Walter Lippmann, presents the problem of creating a new social order. Following that is a large section devoted to challenges to the old economic order. Here are given speeches and essays by President Roosevelt, Stuart Chase, Edward A. Filene, Norman Thomas, Norman Angell, José

[1] *Leadership in a Changing World.* Edited by M. David Hoffman and Ruth Wanger. New York: Harper & Bros., 1935. Pp. xvi+418. $1.60.

Ortega y Gasset, M. Ilin, André Siegfried, and Sir Arthur Salter. Then comes a division concerned with new trends in government, which presents arguments made by Woodrow Wilson, Ramsay MacDonald, Lenin, Mussolini, Briand, Gandhi, Sun Yat-sen, Balfour, and Mustafa Kemal for the actual or planned innovations in government for which they have been in some measure responsible. A smaller division discusses the creation of a new social order through education, and contains expressions from Justice Brandeis, Felix Frankfurter, Salvador de Madariaga, John Dewey, and Bertrand Russell. In a fifth division five winners of the Nobel prize in literature give their visions of a more noble life. Sinclair Lewis speaks through Carol Kennicott; Thomas Mann addresses German youth; and Galsworthy, Tagore, and Romain Rolland describe other visions. A final summary section is devoted to selections from the report of the Hoover Research Committee on Social Trends and a selection entitled "The American Dream" by James Truslow Adams.

Nowhere in the volume is there any attempt to defend the status quo. Based on the evident process of change that involves modern society, the book presents a selection of intelligent points of view looking toward the future. The selections are temperate in tone and make their appeal to the pupil's intelligence. Coming to the pupil, as this book usually would, in the sequence of courses just after he has completed American history, this concentration on future changes is probably justifiable. Surely it is in line with the recommendations of the Commission on the Social Studies of the American Historical Association.

As a book of readings for high-school English classes, it is a happy improvement on the socially insignificant content that makes up the usual fare. On the other hand, however important their content of ideas, some of the essays are hardly examples of a distinguished literary style, and a few—for instance, that by Ortega y Gasset—will probably prove too difficult for pupils to understand. With these exceptions, the book is also excellent reading in connection with any of the various forms of the twelfth-grade course in social science. Original sources for intelligent ideas regarding modern problems have been greatly needed in some such convenient form.

Another attempt to supply somewhat similar material has been made by Harry H. Moore.[1] His book has only about a third of the bulk of the other and is not intended for use as a textbook in English but rather for discussion groups and supplementary reading in connection with social-studies courses. In form it is much like the first book. It reprints selections from the writings of Raymond B. Fosdick, Paul H. Douglas, W. T. Foster, Philip Gibbs, Walter Rauschenbusch, and others. The similarity of the two books is evident in the fact that both reprint the same selections from Lippmann and Adams. Still, the point of view is widely different. Moore, who gives unity to his book by supplying several selections written by himself, presents a consistently liberal, religious

[1] *We Are the Builders of a New World.* Edited by Harry H. Moore. New York: Association Press (347 Madison Avenue), 1934. Pp. viii+166.

point of view toward modern problems. The total effect of his book is a stimulating appeal to individual pupils to take action for the improvement of society in the light of these ideals. The book is temperate, intelligent, and optimistic. It can be used in connection with social-studies courses as an excellent presentation of one very desirable viewpoint that somehow is frequently overlooked. There are questions on each reading, a list of additional readings, and a valuable index of organizations interested in the problems treated. The book is illustrated with a few well-selected photographs.

Both books are attempts to make the American high school contribute more directly than it now does toward enlightened citizenship. Those who think that the schools should be used to defend the status quo will not take kindly toward the use of these books. In the hands of teachers who wish to act as narrow propagandists for or against particular programs, the books could be perverted to ends that no school administrator could defend, but for that matter so can any book that deals directly with controversial issues. Professionally minded teachers will find these books extremely valuable for developing high ideals and interests regarding modern society and its problems. The books are to be welcomed as needed tools for the work of developing more desirable citizens.

ELMER ELLIS

UNIVERSITY OF MISSOURI

Making dramatic literature and the motion picture effective in the classroom.—The National Council of Teachers of English has issued two publications which deserve careful attention from all teachers of literature. Both books will be of especial interest to teachers of dramatics, although their usefulness is not restricted to this limited field.

Teachers who have felt the need of a satisfactory index to dramatic literature will find comfort in the appearance of Smith's guide.[1] It is an admirable compilation of data on important full-length and one-act plays. In tabular form there is presented a list of plays by title, giving types, dates of first productions, the amount of royalty charged for production, the number and the kinds of sets required for staging, and the number of men and women actors required. The editor has starred the plays that he considers suitable for production by high-school groups. In addition to the tabular index there is a section devoted to brief synopses of the listed plays and to data on published editions of the plays. For the full-length plays this material is arranged in chronological divisions, with a descriptive preface to each division. To complete the work, excellent bibliographies on play production, anthologies of drama, and a directory of play publishers and play brokers are given. The

[1] Milton Smith, *Guide to Play Selection:* A Descriptive Index of Full-Length and Short Plays for Production by Schools, Colleges, and Little Theaters. A Publication of the National Council of Teachers of English. New York: D. Appleton-Century Co., Inc., 1934. Pp. x+174.

limitations of the work are chiefly the limitations of space. From the thousands of published one-act plays Professor Smith, without producing a work of staggering proportions, could choose only a limited number. Naturally, many good plays are not found in the index. The publishers of the index will be giving teachers a service if they sponsor additional volumes to supplement this guide.

The problem of making effective use of motion pictures for instructional purposes—rather, the problem of developing higher critical standards of motion pictures—is one that has led to considerable research in the past two or three years. Lewin's monograph[1] is a summary of the materials gathered during a survey of the possibilities of teaching photoplay appreciation in the classroom. The survey was sponsored by the National Council of Teachers of English. Nearly two thousand pupils in thirty-one schools located in twenty-eight cities were involved in the experiment. The cities were selected from all sections of the country. In each of the schools participating in the experiment, experimental and control groups were set up to test the possibility of teaching effectively appreciation of motion pictures. Participants in the experiment enlisted the cooperation of exhibitors, who permitted both groups of pupils to witness pictures free of charge. While not all groups saw exactly the same list of pictures, there was sufficient uniformity in the pictures studied by each school to make the experiment valid. For the experimental groups study guides, rating scales, and other study materials were supplied.

Perhaps the greatest significance of Lewin's monograph is the evidence that it affords of the methods of directing intelligent study of photoplays, both as commentaries on social experience and as an art form. The materials contained in the two chapters on methods of instruction are the best parts of the book. They suggest many excellent ways of using photoplay material in the classroom. Without doubt, such instruction must lead to a more critical attitude among pupils. Some of the findings of the author seem, however, of doubtful value. For example, the material reported in the chapter entitled "Influence of Photoplays on Attitude and Conduct" seems worse than useless. It reports reactions of pupils to the social implications of pictures after seeing a single performance. These judgments may or may not be important as an index to the actual conduct of a child. It will take more than a boy's statement that the picture "Alibi" influenced him "not to make excuses" to give evidence of changed conduct.

Naturally, the monograph gives greater attention to the social significance of motion pictures than to their artistic merits. Without asking that less attention be given the former aspect, I should like to see much more attention given the latter. What capacities have pupils, when guided, for recognizing good direction? Indeed, what instruction might be provided on such a point? How responsive are pupils to good photography, to good acting techniques, to good scenario

[1] William Lewin, *Photoplay Appreciation in American High Schools*. English Monograph of the National Council of Teachers of English, No. 2. New York: D. Appleton-Century Co., Inc., 1934. Pp. xvi+122. $1.00.

composition? The author indicates a desire to minimize technical instruction. If instruction of these suggested types is technical, I must disagree with him. The motion picture, good or bad, merits consideration as an art form which is affecting the structures of the legitimate drama and the novel. Certainly the more mature pupils can give as much attention to this phase as to the ethical value of a picture. This book will no doubt encourage increased activity in this new and exciting field. The Bibliography and the formal questionnaires given by Lewin will be worth study by persons who wish to explore further the possibilities of teaching in this field.

RUSSELL THOMAS

A new unit-problem organization of general science.—Beginning with the widespread introduction of general science into American high schools about 1910, textbooks for this new subject were published with increasing frequency until about 1925, when at least eight new or revised books appeared. Since that time the supply has been kept up by the appearance of two or three new books each year. One of the 1934 additions to the list was prepared by three men with experience in high-school administration, supervision, and teaching.[1]

In contrast with a number of recent textbooks, this book is intended to present a course in science which is complete in itself. According to the authors, "the selection of the material was based primarily upon the student's immediate life-interests, the educational value of the material to him, and its probable use in adult life" (p. iii). The introductory chapter sketches for the pupil something of the history, the methods, and the results of science. The remaining thirty-two chapters are grouped in sixteen units. The major topics of the units are, in order, the atmosphere, sound, water, weather and climate, the earth and the universe, geological processes and soil, the physical and chemical nature of matter, the forces of nature, machines, heat, light, electricity, plants, animals, food and the work of the body, germs and the body. There are no special treatments of buildings and building materials nor of clothing. In general, the content closely approximates that of the accepted textbooks in general science published in the last few years.

The wealth of material included in the book will make necessary, in most cases, either a selection of the more appropriate parts of the book or a superficial treatment of its content. Some of the sections, such as those dealing with atomic structure, chemical change, and the mathematical relations of machines and work, will not be understood by most pupils without more extended treatment than is provided. A pupil who gains a real understanding of the principles included in this textbook will have a science education adequate for the average citizen.

As in the case of at least two widely known textbooks, the authors state that "the material for each unit centers around one of the major problems of the

[1] Charles H. Lake, Henry P. Harley, and Louis E. Welton, *Exploring the World of Science.* Newark, New Jersey: Silver, Burdett & Co., 1934. Pp. x+692. $1.76.

pupil's environment" (p. iii). Each unit includes from one to three chapters, the titles of which, like those of the units, are stated in problem form. Within each chapter are problems and subproblems. The methods by which the solutions of the problems are developed are intended "to aid the pupil in the formation of habits of scientific procedure" (p. iii) and in arriving at relevant generalizations. Directions for an adequate number of experiments and demonstrations are part of the material.

Each unit is preceded by a short, well-written introduction and is followed by a series of good thought exercises and a list of selected references for extended reading. Each chapter begins with a group of interesting "Do you know?" questions and ends with a "Self-Test" giving from ten to fifty-seven words to be defined and from ten to thirty objective-test items. Material to keep the rapid workers profitably occupied is provided by special problems at appropriate places in the reading material and by a number of usable suggestions for "Projects and Reports" at the end of the units.

The organization of the book into both units and chapters leads to the use of artificial and repetitious problems for headings. Instances of this defect are found in Unit II, "What Is Sound and What Use Does Man Make of It?" which contains only one chapter, entitled "How Are Sound and Music Produced and Heard?" and in Unit XVI, "How Can You Keep Your Body Healthy?" which contains two chapters, entitled "How Can We Protect Our Bodies from [Germ] Disease?" and "How Can We Protect Our Bodies from Harmful Germs?" The attempt to carry the "exploring" theme of the title through the book in the unit introductions also leads to the use of a number of incongruous headings, such as "Exploring Weather and Climate," "Exploring the Nature of Matter," and "Exploring Nature's Formula for Sound Health."

For the most part the presentation of the material is direct and interesting, but there are indications of inadequate editing. An unduly large number of statements are inaccurate in content, lack clarity, or are too difficult for high-school Freshmen. The lists of what the authors call "technical" words in the "Self-Tests" include words which are not at all technical and others which have little permanent value in a pupil's vocabulary. Some words in these lists are used only once or twice in the chapter in which they are listed. The term "element" is used in the explanatory matter on page 84 but is not explained until page 254. "Energy" is defined in terms of work on page 280, and "work" is defined on page 312. Many opportunities for the use of helpful cross-references have been neglected. The Index lacks some such important words as "automobile," "artery," and "well." The illustrations for the larger part of the book are adequate and well done, but in a few sections, such as those which explain human circulation and respiration, the diagrams are entirely inadequate.

Although this book presents little that is new in content, organization, or point of view, it is well worth consideration as a textbook for ninth-grade courses in general science.

JOHN C. MAYFIELD

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

BAIN, WINIFRED E. *Parents Look at Modern Education:* A Book To Help an Older Generation Understand the Schools of the New. New York: D. Appleton-Century Co., Inc., 1935. Pp. xiv+330. $2.50.

BAWDEN, WILLIAM T., and OTHERS. *Industrial Arts in Modern Education:* Published in Celebration of the Twenty-fifth Anniversary of the Manual Arts Conference of the Mississippi Valley. Peoria, Illinois: Manual Arts Press, 1934. Pp. 168.

CURTI, MERLE. *The Social Ideas of American Educators.* Report of the Commission on the Social Studies of the American Historical Association, Part X. New York: Charles Scribner's Sons, 1935. Pp. xxii+614. $3.00.

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